

# PULP & PAPER

MARCH 1955

Canada vs. South (at Montreal)  
see page 62

Printing Paper Variations  
see page 64

Gas vs. Electric Trucks  
see page 65

South Grows Better Trees  
see page 91



THE UNDEFENDED FRONTIER—Fraser pipes pulp across the St. John River (see inset) from Edmundston (Canada) to Madawaska (Maine) mills . . . page 80



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# PULP & PAPER

Production and  
Management  
Magazine  
of the Industry

VOLUME 29

NUMBER 3

March 1955

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MILLER FREEMAN PUBLICATIONS

PULP & PAPER — March 1955

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**What Du Pont Case Means to This Industry**

Mergers of big companies and interlocking directorates are not uncommon in the pulp and paper industry. Many companies are big, and are becoming bigger. Conservation and wiser use of vast forests is more feasible in direct proportion to the size of the company. Companies are enlarged, also, in order to become more soundly integrated from tree to finished product, in order to diversify products and in order to obtain broader markets in more regions. Such expansion fortifies a company against periods of recession in certain types of products or certain market areas.

Just being "big" and being complex is no crime or misdemeanor in this country. This was established in the recent Du Pont anti-trust suit. Three and one-half years after the original complaint was filed, the case came to trial in a U.S. District Court in Chicago. The trial extended through 13 months, there were 49 witnesses and 2,500 exhibits. Nine months later Judge Walter J. LaBuy tossed the case out of court, dismissing all charges under anti-trust laws made against Du Pont Co., 34 members of the Du Pont family, General Motors Corp. and U. S. Rubber Co.

Since the Sherman "Anti-Trust" Act of 1890, any big business was liable to be loosely called "a trust" and condemned just for being big, whether there was any wrongdoing involved or not. "Trust"—see your dictionary—had meant "confidence," "faith," "a charge," "a responsibility." But this meaning was distorted or forgotten.

It was charged that defendants sought control of management and policies of Du Pont, General Motors and U. S. Rubber, and sought to exploit exclusive markets for Du Pont and U. S. Rubber, and to reserve exclusive fields of production to Du Pont.

The stakes were high. If Du Pont had been forced by the government to sell all its stock in General Motors and distribute proceeds as cash dividends to stockholders, the capital gains taxes and income taxes would have destroyed most of the investment.

Absolved of all charges were 34 members of the Du Pont family, headed by Irénée Du Pont, 78, elder statesman and honorary chairman of the company. Two of his brothers, both originally charged, Pierre and Lamot (84 and 71), died during the course of the trial. The former had been a witness.

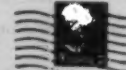
Du Pont Co. had invested a surplus \$25,000,000 in General Motors. Though he declined at first, Pierre Du Pont became a financial advisor to G.M. Then he became president, only for 3 years, but his term marked the end of a disastrous, dangerous era for G.M. and the beginning of a new magnificent one. His short "interim" term (he was succeeded by Alfred Sloan, later Charles E. Wilson), brought order out of chaos in Detroit. In U. S. Rubber, Du Pont Co. owned 18%. But there was never any conspiracy, never any favoritism, and the management of each company acted always in what it deemed the best interests of that company. In fact, G.M. had often rejected Du Pont products.

Judge LaBuy, a Franklin Roosevelt appointee, said "few cases in history have been so thoroughly prepared, so skillfully argued."

Thanks to the defense fight and his decision, pulp and

paper industries may grow and may plan bigger things for the future, without fear they will be questioned—not because they fail—but just because they succeed. This industry can be pleased to note that a court decision in Chicago has prevented the destruction of an industrial enterprise, just because it is big. The decision may save others in the future.

The difference between bluster and facts in the industrial world has been established. We have grown up a lot in this country since the Roosevelt administrations, where this case had its inception, and earlier administrations, as well.



**The Editor**  
**PULP & PAPER**  
1791 Howard Street  
Chicago 26, Illinois

**READERS  
CORNER**

No anonymous letters will be considered but names may be withheld if desired.

**"Beautiful Job"**

I would like to take this opportunity to thank you and your staff for the beautiful job done on the Glatfelter article in your Dec. issue. We were very much pleased with the results.

P. H. GLATFELTER III,  
President, P. H. Glatfelter Co.

**"Exceedingly Well Done"**

Your article on the Bowaters Tennessee Mills is exceedingly well done and a credit to your fine organization.

CHARLES T. HICKS  
Vice President, The Bowater Paper Co. Inc.

**"A Very Good Job"**

I think you have done a very good job (Bowaters story), which will have interested your readers generally.

ARTHUR BAKER  
(Founder of Britain's Technical Assn.)  
Chief Tech. Adviser to Bowaters and  
Pres. of British (P & P) Employers Federation.

**"Very Informative"**

We would like to express our enthusiasm for your magazine, which we find to be very informative.

S. V. SIHVONEN, Manager  
Crossett Forestry Division, of the Crossett Company.

**"Doing a Wonderful Job"**

I have read with interest the Bowaters story and I congratulate you for producing such an excellent article, which I notice is in keeping with your entire magazine. Your publication is doing a wonderful job.

Sincerely, B. E. Young  
Assistant to the President, Southern Railway System

# CUT Pulpwood Handling COSTS



with Bucyrus-Erie  
**TRANSIT CRANES**



Investigate the many cost-cutting advantages of Bucyrus-Erie 15-B or 22-B Transit Cranes. These powerful machines have plenty of speed for handling pulpwood economically — in the woods or in the yard — plus high-speed mobility for quick moves to scattered loading and unloading sites. Look over these important features — see how they can help you make your pulpwood handling operations more efficient, more profitable.

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Fully independent power boom hoist and power controlled load lowering on the main hoist line mean fast and safe loading. Booms are easy to spot because friction swing brake, in addition to regular swing lock, holds boom exactly where operator wants it.

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are delivered by direct-connected mechanical controls. Elimination of all excess weight and excellent machine balance mean fast, smooth swing.

**RUGGED CARRIER MOUNTING** stands up to operation on rough terrain. High quality construction of standard Bucyrus-Erie 15-B or 22-B upper works means dependability month after month ... in all kinds of weather.

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### MIDDLE WEST NEWS

#### Geisler Is Vice Pres.; Mrs. McCourt Honored

**CARL GEISLER** is a new vice president of Marathon Corp. He continues in charge of personnel. Native of Wausau, Wis., he graduated from Harvard Business School and U. of Penn. He was former personnel director at Hammermill Paper.

**MRS. EARL MCCOURT**, whose husband (MICKEY), is an executive of Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., is now on the National Board of the Girl Scouts of America. She has been leader in Girl Scout work for many years in Wisconsin.

**OLIN CALLIGHAN**, paper industry sales mgr. for Minerals & Chemicals Corp. of America, and his wife, Mae, have moved into a new ranch-type home at 3014 Bronson Blvd., Kalamazoo, Mich. Both have lived all their lives in Kalamazoo.

**DAVE GEARHART**, manager for General Electric in the Kalamazoo and Western Michigan paper industry region, is building his family a new home just a block from the Callighans.

**HERBERT T. RANDALL**, vice pres. and director of research and engineering, Champion Paper, Hamilton, O., and wife donated their 32-ft. long 200 hp. diesel powered land cruiser, with living accommodations for 4 persons, to Stanford Research Institute. Mr. Randall designed the huge motor coach. It will be used first by a Stanford physicist as Nevada residence during atomic tests there this spring.

**G. KENT DICKERMAN**, son of Consolidated Water Power & Paper's technical director, is going to work for Bowater Paper Corp. in Kent, England. He graduated in January in paper technology at Western Michigan College.

**MASON HINKLE** is new staff production asst. to Production Mgr. **JOHN GRAVES** at Mead's Chillicothe mill. **ROGER BALL** is new No. 2 paper mill supt. New conversion coated production assistant is **JOHN CARSON**, who came to Ohio from Philadelphia and Buena Vista, Va., where he was supt.

**CHARLES H. CLAYPOOL**, supt. sulfite mill, Oxford Paper Co., Rumford, Me.,

has been named assistant mill manager of Oxford Miami Paper Co., West Carrollton, O., according to **H. PAUL PETZOLD**, mill manager.

**JOHN J. O'NEIL**, recently in sales and sales promotion in the East for Fraser Paper, Ltd., has been transferred to its Chicago sales office.

**EDWIN F. FISCHER**, formerly of Gilbert Paper, has joined Nekoosa-Edwards as research engineer under **DR. TRUMAN A. PASCOE**, research dept. mgr.

**LELAND CLUTTER** is new maintenance supt. at Mead's Chillicothe mill. **R. B. MEYERS** succeeded him as steam power supt. and **KENNETH MELVIN** is new asst. steam power supt.

**N. J. NIKS**, who holds several patents in papermaking, has retired as manager and gen. supt. at Munising Paper Co., Kimberly-Clark subsidiary. He plans to spend winters in Florida and summers in upper Michigan. He was 23 years at Munising and was gen. supt. ten years before that at Chillicothe Paper. Previously he was with KVP and other mills.

**GEORGE H. GILL III**, new sales representative of Huyck Felts in the Middle West, was planning last month to move from temporary residence in the Manchester hotel, Middletown, O., to Dayton, O.

**ART SARVER**, Nekoosa paper mill supt. for Nepco, was honored as "Papermaker of the Month" recently by Noble & Wood's *Agitator*. He has been a papermaker 43 years and his son, **MERLE**, is color chemist at Nekoosa.

**WILLIAM ALOISI** is new tech. supervisor for board mill No. 2 at Gardner Board & Carton, Middletown. Born in Great Barrington, Mass., he graduated from Syracuse after army service.

**JOHN McPHERSON**, of Mosinee Paper, heads a committee including **HAROLD SKINNER** and **LARRY SABATKE**, of Marathon, arranging for an April meeting of Northwestern Supts.

**JOHN SWANSON** of the Institute attended the 3rd national coating clays conference in Houston, Tex., in late Oct.

**BRONSON TUFTS**, editor and founder of Hercules Powder Co.'s **PAPER-MAKER**, died Dec. 27.



### In Industry News

**HERBERT W. SUTER JR.** (left), Vice Pres. and Director of Sales, Champion Paper & Fibre Co., Hamilton, O., whose selection for the Board of Governors of the Sulfite Paper Manufacturers Assn. Inc., was announced at that group's Paper Week events by Tom Burke, Assn. Gen. Secy.

**JOSEPH P. MCTOMMONEY** (center) is new Vice Pres. and Gen. Mgr. of The Moore & White Co., Philadelphia, machine builders. He was former sales engineer for M & W in eastern states. He served in Marines in Far East theater in World War II and was a director of UN relief work in China later.

**DONALD A. BORDEN** (right), of 2930 Virginia Ave., Kalamazoo, Mich., will represent The Bauer Bros. in Michigan, Northern Ohio and Northern Indiana, specializing in pulp and paper equipment. He graduated from Tri-State College, served as engineer for Time Inc. in its former paper mill operations at Kalamazoo and was Plant Engineer at Otsego Falls Paper Mills, Inc., where semi-chemical pulping is done.

### NORTHEAST NEWS

#### Fair Named Director; Greenwood Is Gair V.P.

**A. E. HAROLD FAIR**, executive vice president, Brown Co., Boston, Mass., has been elected a director of the Westfield River Paper Co., Inc.

**GEORGE B. GREENWOOD** is newly elected vice president of Robert Gair Co., Inc. according to **GEORGE E. DYKE**, president. He will head their industrial and community relations.

**JOSEPH B. TALBIRD** has been named comptroller, Rayonier, Inc. He was formerly assistant comptroller with offices at Jesup, Ga.

**LOUIS CALDER**, president, Perkins-Goodwin Co., is the eighth person to receive title of "Honorary Whooper of the Great State of N.H.," according to **EDWARD MCSWEENEY**, vice president and treasurer, Perkins-Goodwin. President Eisenhower and vice president Nixon are among the others.

**VINCENT A. CARPANO** has been promoted to assistant supervisor, technical service dept., Oxford Paper Co., Rumford, Me., according to **WALTER HOLLAND**, mill manager. **ROGER T. OGDEN**, has been made industrial engineer and **PHILIP H. MILLIGAN** is new assistant safety mgr.

Continued on page 10

# This woodyard chain combines high strength and ruggedness

## C-132 File hard Promal combination chain-- a popular chain for pulpwood handling

HERE'S a chain that's strong enough to handle hardwoods, yet is low in over-all cost. Little wonder that C-132 is so widely used on log conveyors.

It's the same story on every drive and conveying job. There's a chain in Link-Belt's complete line that matches your exact needs. Next time you're planning a new mill—or revamping an old one—call Link-Belt. There's a sales office or distributor near you that can save you money on your drives and conveyors.

**LINK-BELT**  
CHAINS AND SPROCKETS

13,000

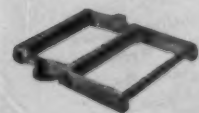
No ONE chain serves every purpose--get the RIGHT one from Link-Belt's complete line



SS bushed chain is a heavy-duty chain for severe service such as on barking drum.



Rivetless chain, with its light weight and high strength, is ideal for conveyors.

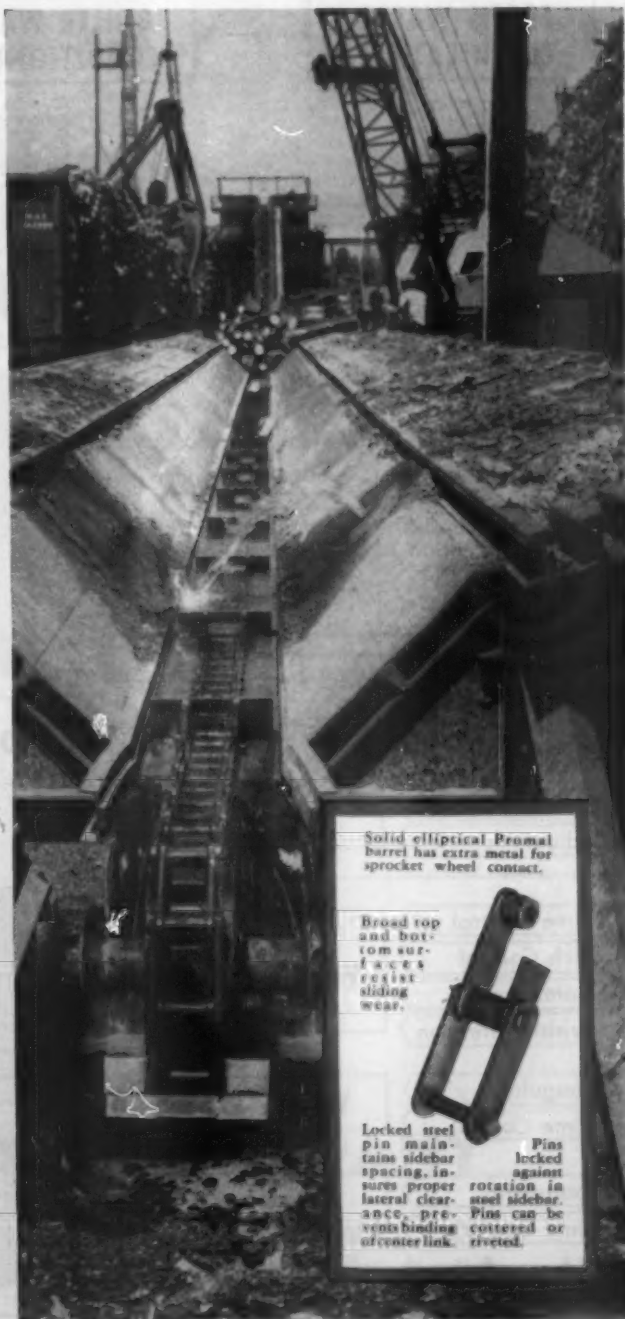


Class H combination drag chain offers long life for tough refuse conveying. Rigid block links are reversible.



LXS chains are made to close tolerances from carefully selected steel. Ideal for rugged drive and conveyor service.

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in all Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.



Solid elliptical Promal barrel has extra metal for sprocket wheel contact.

Broad top and bottom surfaces resist sliding wear.

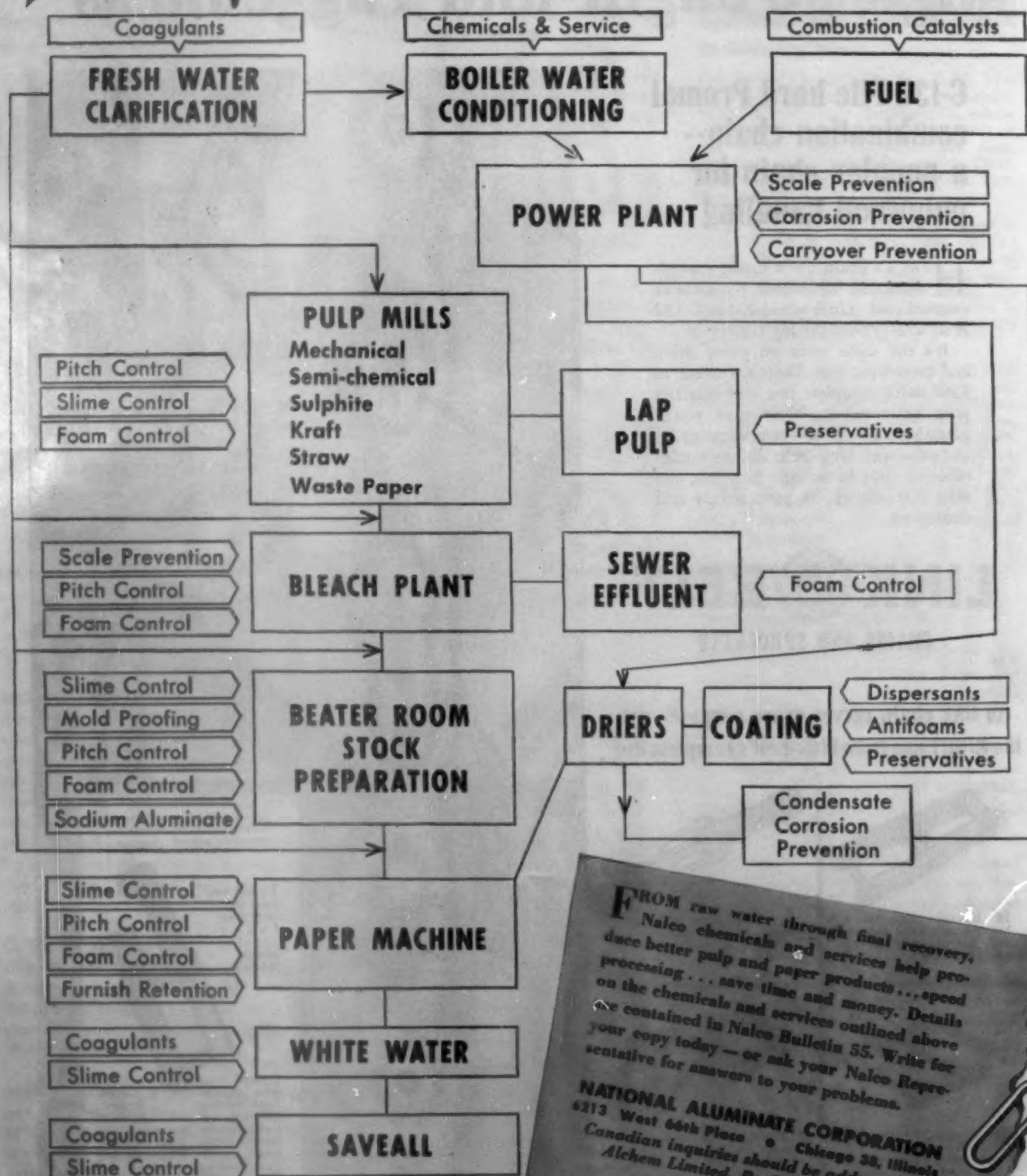


Locked steel pin maintains sidebar spacing, insures proper rotation in lateral clearance, prevents binding of center link.

Pins locked against steel sidebar. Pins can be cottered or riveted.

Pulpwood conveyor employing C-132 Link-Belt combination chain, with pusher attachment every 6 ft.

# CHECK of *Nalco*® PRODUCTS and SERVICES for the PAPER INDUSTRY



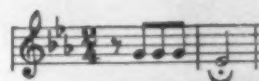
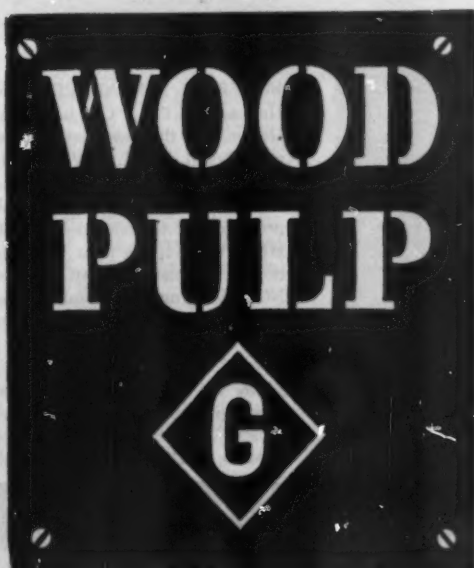
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*Established 1886*



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### NORTHEAST NEWS

**PHIL GOLDSMITH** has announced his resignation from Pusey & Jones Corp. He is an inventor of paper machine equipment.

**RALPH KUMLER**, formerly of American Cyanamid, is new director and secretary of the Waste Paper Utilization Council.

**DAVID L. BORN** has been appointed to technical staff of H. Waterbury and Sons Co., Oriskany, N.Y. Under **B. L. CHANER**, technical supervisor, Mr. Born will assist in research and development work on papermaking felts. He had been with Finch, Pruyn & Co., and was paper research assistant at Syracuse U., where he graduated.

**DAVID L. BORN**, now on technical staff of H. Waterbury and Sons Co.



**PARKMAN COLLINS**, district mgr. for Warren Steam Pump Co., Inc., has moved from Belmont, Mass., to new offices at 80 Federal St., Chamber of Commerce Bldg., Boston.

**ROBERT T. STERNBERG**, power supt., Hammermill Paper Co., has been elected chairman of the Erie Civic Smoke Abatement Board. **KARL E. VOGEL** has been made technical coordinator, Hammermill Paper Co., and **CLARENCE L. LUTHER** promoted to assistant foreman. **JOHN F. HENRY** heads up their instrument section a foreman. **RAYMOND W. REYNOLDS**, former supervisor of instrumentation has moved over to the engineering dept. as instrument engineer.

**JACK K. BARRY** has been named to head up a new sales promotion dept. for Fraser Paper, Ltd., according to **JAMES C. CONLEY**, general sales mgr.



### Gallup Joins Williams-Gray, Henry Perry Goes with Lockport

**C. WESTCOTT GALLUP, JR.** (left), who has joined Williams-Gray Co., 221 No. LaSalle St., Chicago, as announced by the senior partner in the firm, Paul Foster. Mr. Gallup was born in New Jersey, attended St. Johns College in Maryland, and won two purple hearts as a WW II infantryman. He has been a sales rep. in the midwest and southwest for a number of years. Williams-Gray represents various manufacturers of machine clothing. Mr. Gallup lives at Winnetka, Ill.

**HENRY PERRY** (right), new head of Sales Dept., Lockport Felt Co., Newfane, N.Y. Mr. Perry was Secy.-Director of the Waste Paper Utilization Council. He previously has been with Bennett Ltd. of Canada, Arthur D. Little, Inc., J. P. Lewis Co., Frederick C. Clark Associates, and was editor of *Paper Trade Journal*.

Continued on page 14

**DIAMOND DIES**

As an early measure in controlling the quality of Lindsay Fourdrinier wire cloth, we operate our own diamond die shop. The selection of diamonds is followed by mounting, piercing and polishing. Accuracy is paramount. The Lindsay Wire Weaving Company, Cleveland 10, Ohio.

**LINDSAY WIRES** Since 1904

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LAB TESTS AND MILL TRIALS PROVE IT!

# Mersize RM dry means less dust!

Your beater room men will appreciate Mersize RM Dry because it is low in dusting, less irritating, not so sticky to handle.

Mersize RM Dry also delivers these other money-saving advantages:

**High Efficiency**—Against dry rosin size you will save 20% because Mersize RM Dry gives equal sizing with 40% less material.

Even against dry fortified sizes you save . . . one mill evaluation covering three months on six consecutive carloads of dry size proved Mersize RM Dry gives equal sizing on sulfite bonds, envelope and offset at a dollar savings of more than 10%.

**Light Color**—Mersize RM Dry is very light in color, resists darkening with age . . . produces high-brightness paper . . . comparable to the lightest rosin size.

**Low-Foam**—Remember that you get smooth operation with low-foam index Mersize RM Dry.

For further information on Mersize RM Dry, write Organic Chemicals Division, MONSANTO CHEMICAL COMPANY, Box 478-B-1, St. Louis 1, Missouri.

Mersize: Reg. U. S. Pat. Off.

#### CHECK LIST OF MONSANTO'S COMPLETE LINE OF FORTIFIED SIZES

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Concentrate, for use with rosin size

Mersize CD-2 Dry

Concentrate in dry form

Mersize RM 70%

Complete fortified paste size

Mersize RM 77%

Complete fortified paste size

**MONSANTO**  
CHEMICALS - PLASTICS

SERVING INDUSTRY WHICH SERVES MANKIND



## Here's a real acid test!

3,000 feet of U. S. Uscolite Pipe unharmed after 2 years' steady drinking of acid

Section of three U.S. Uscolite Pipes in color mixing section of wallpaper plant. The pipes carry corrosive solution for fixing the print on wallpaper.



Uscolite pipe and fittings are made in the broadest and largest line of stock sizes on the market. Sizes run from 1/4" to 6".

A wallpaper plant in Illinois changed ideas about piping when U. S. Uscolite® Pipe was installed in the two pipe lines that handle corrosive materials. (One line handles a corrosive solution used to fix the print on the wallpaper; the other handles 10% hydrochloric acid dye solution.)

Before Uscolite was put in, the piping in the plant lasted about 3½ years. But U.S. Uscolite, 3,000 feet in all, has so far been on the job 4 years—with no deterioration whatever. Moreover, the Uscolite piping is exposed to accidental knocks and physical abuse all along the line, yet its high impact strength protects it from harm. Based on its present performance, it looks like it will last for years and years.

A product of United States Rubber Company, Uscolite piping is, despite its strength, very light in weight. It resists, inside and out, the corrosive action of acids, salts, alkalis and fumes. A complete line of pipe, fittings and Uscolite (Hills-McCanna) valves is available for any and all piping problems.

Rid yourself of any problems in carrying corrosive materials; get in touch with any of the 27 "U. S." District Sales Offices, or write address below.



*"U.S." Research perfects it... "U.S." Production builds it... U.S. Industry depends on it.*

**UNITED STATES RUBBER COMPANY**  
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes • Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting



## COATING CONTROL

It is said that a wise Sioux medicine man once discussed the matter of making a living with *Miranda Aurantia*, the garden spider, who told him: "Coating control is the all-important factor. With it, I wrap up job after job very profitably. Without it, I wouldn't be worth a 'sou'."

There's something extremely significant in that for you, Mr. Papermaker—since it's your business to provide satisfactory finished sheet to meet numerous specifications. The importance of coating control is something you have occasion to recognize daily.

And that makes us confident we can serve you to your great advantage—for we have lived closely with paper coating problems for many years, and have developed the most complete line of paper coating chemicals available. These Nopco® products are specially designed to help you solve problems of viscosity control, foaming, even distribution, dusting, gloss, and moisture content.

When our technical representative calls, let him show you how Nopco coating aids—defoamers, emulsifiers, plasticizers, and eveners—can help you wrap up job after job satisfactorily...meeting all of your customers' specifications with just the finished sheet required.

### LOOK TO NOPCO AS YOUR SOURCE OF SUPPLY FOR:

Foam Killers • Sulfated Oils • Emulsified  
Resins • Coating Compounds • Wax  
Emulsions and Emulsifiers • Rewetting  
Agents • Insoluble Metallic Soap Dispersions  
• Sheet Formation Aids • Plasticizers • High  
Free Resin Sizes • Pitch Dispersants

\* Registered U. S. Pat. Off.



**NOPCO**  
Chemical Company, Harrison, N. J.

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

**SOUTHERN NEWS**

**Wess Suttle Retires;  
Dunn Is County Official**

J. WESS SUTTLE, for many years with Southern Advance Bag & Paper Co., Hodge, La., and afterwards with Hermann Mfg. Co., has retired and now resides at Route 4, Box 217, Mobile, Ala., where he will greet any friends that drop in.

JETER MARTIN, finishing supt. for Champion at Canton, N.C., returned from a tour of Europe by credit union representatives of U.S. and Canada.

WILLIAM K. JACKSON, native of Augusta, Ga., a Georgia Tech graduate, and with Union Bag since 1935, recently as packaging services mgr., died suddenly Jan. 25 at his Freeport, L.I., home. He was 44.



**In New Mill Assignments**

(L to r) T. F. MARTIN JR., new Gen. Supt., Hartford City (Ind.) Paper Co., where he had been Tech. Director and Quality Control Supervisor since 1950. He graduated from Syracuse. Charles Williams, Mill Supt., retired.

T. T. (TEX) COLLINS, new Tech. Director, Hudson Pulp & Paper, Palatka, Fla. He is a Texan, from Rice Institute and the Institute in Appleton. Was with Thilmann and recently was Tech. Director at National Container, Jacksonville.

LESLIE CHRISTISON, who has joined Champion-International Co., Lawrence, Mass., as Research Chemist. He is a graduate of MIT and was with American Woolen Co.

JUDGE T. T. (TAD) DUNN, vice pres. and res. manager of Union Bag & Paper Corp., Savannah, is a newly named member of the Chatham County Commissioners, filling out a term that runs through 1956. Another Union man in Savannah, HAROLD CARTER, assistant master mechanic, was elected to a 2-year term as city alderman.

ROBERT E. BARNUM, of 2186 Bolton Dr. N.W., Atlanta, Ga., is new field sales representative in the Southeast for Good-year Tire & Rubber's Chemical Division. He was born in Raleigh, N.C., and graduated from the U. of Florida in chem. engineering.

CHARLES E. DANIEL, president and founder of Daniel Construction Co., Greenville, S.C., became chairman of the board and his brother, R. HUGH DANIEL, of Birmingham, Ala., succeeded him as president. C. A. THRASHER continues as vice pres. and chief engineer. Two new branches are headed by H. L. LONGCHIER at Richmond, Va., and HARRY J. STELLMAN at Jacksonville, Fla. CARL G. ENGLUND heads the Greenville office and J. A. DENTICI heads the Birmingham branch. Messrs. Englund, Longcrier and Stellman are also vice presidents. The Daniel firm is building new additions to Coosa River Newsprint Co.'s mill.

CHARLES E. ELLIOTT, who graduated in January in paper technology at Western Michigan College, has joined the staff at Champion's Pasadena, Tex., mill. His home town is Battle Creek, Mich.

Continued on page 18

**TRONA<sup>®</sup>**  
**SALT CAKE**  
**FOR**  
**QUALITY KRAFT**  
**PRODUCTION**

TRONA, long the largest basic source of natural sodium sulphate ( $\text{Na}_2\text{SO}_4$ ) continues to produce highest purity uniform grade Salt Cake, to keep pace with the expanding kraft paper industry. You can be sure, when you specify TRONA, of an adequate and dependable source of supply for this essential ingredient in quality kraft production.

**American Potash & Chemical Corporation**

**TRONA**  
INDUSTRIAL AND AGRICULTURAL CHEMICALS

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Los Angeles 24, California  
99 Park Ave., New York 16, New York  
Plants • Trona and Los Angeles, California

**SIMONDS  
FORGES  
THE STEEL**  
to make the  
cutting edge last



**SIMONDS**  
SAW AND STEEL CO.  
FITCHBURG, MASS.

Experience proves "Red Streak" Forged Slitters maintain a smooth cutting edge longer than slitters made by any other method. Note the dense and uniform Simonds steel grain structure around the slitter rim. It's tougher, harder — won't flatten out or chip when operating against hardened steel rolls.

Scientifically heat-treated to just the right combination of hardness and toughness . . . precision ground to perfect roundness and close hole tolerances to fit standard holders . . . Simonds Forged Slitters give you the *smoothest, most dependable* cutting at lowest cost. Ask your Simonds Industrial Supply Distributor about "Red Streak" Forged Slitters with the longer lasting cutting edge.

For Fast Service  
from  
Complete Stocks

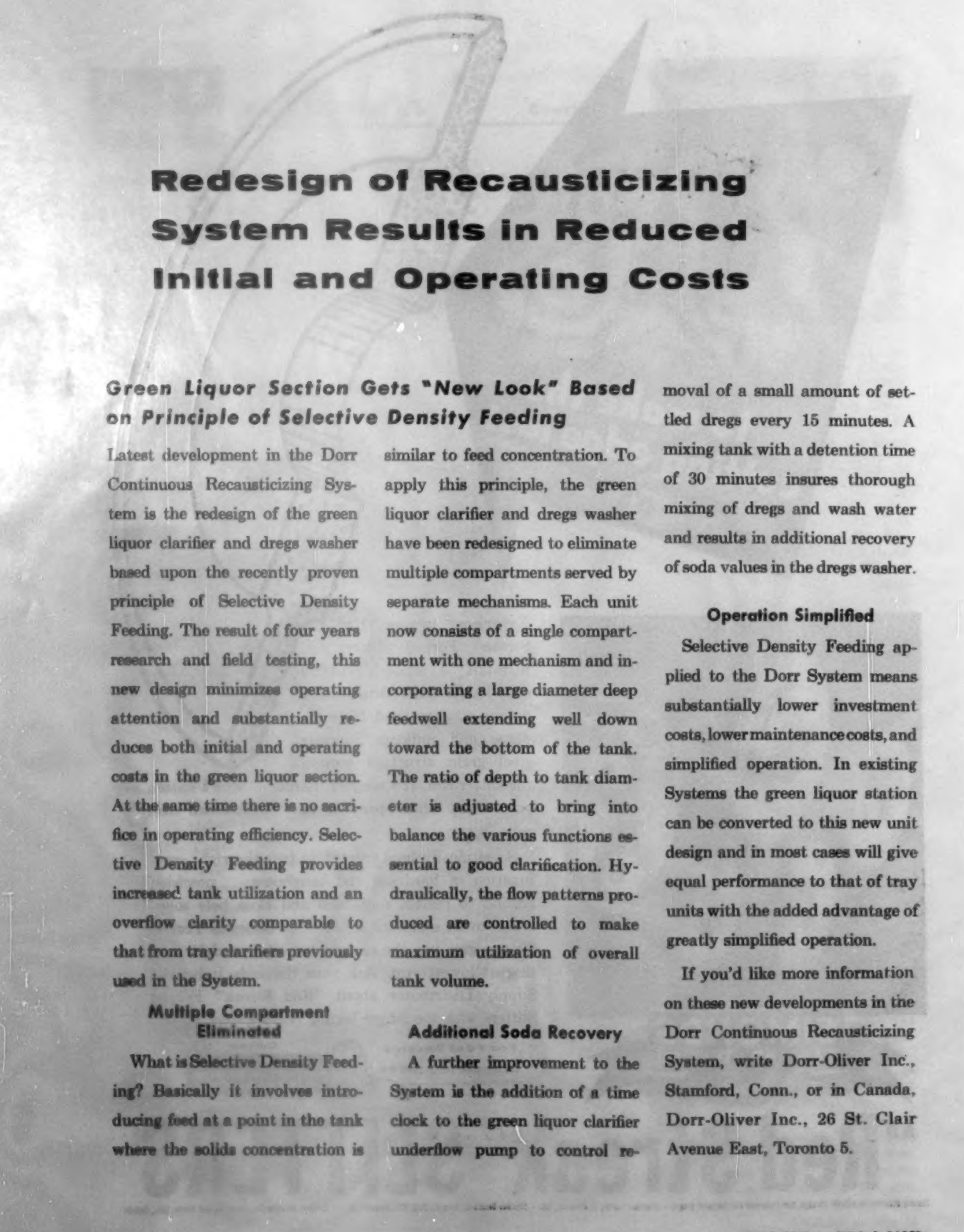


Call your

**SIMONDS**  
Industrial Supply  
DISTRIBUTOR

# "Red Streak" SLITTERS

Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon • Canadian Factory in Montreal, Que. • Simonds Division: Simonds Steel Mill, Lehighport, N. Y. • Simonds Abrasive Co., Philadelphia, Pa. and Arvida, Que., Canada



## Redesign of Reausticizing System Results in Reduced Initial and Operating Costs

### Green Liquor Section Gets "New Look" Based on Principle of Selective Density Feeding

Latest development in the Dorr Continuous Reausticizing System is the redesign of the green liquor clarifier and dregs washer based upon the recently proven principle of Selective Density Feeding. The result of four years research and field testing, this new design minimizes operating attention and substantially reduces both initial and operating costs in the green liquor section. At the same time there is no sacrifice in operating efficiency. Selective Density Feeding provides increased tank utilization and an overflow clarity comparable to that from tray clarifiers previously used in the System.

#### Multiple Compartment Eliminated

What is Selective Density Feeding? Basically it involves introducing feed at a point in the tank where the solids concentration is

similar to feed concentration. To apply this principle, the green liquor clarifier and dregs washer have been redesigned to eliminate multiple compartments served by separate mechanisms. Each unit now consists of a single compartment with one mechanism and incorporating a large diameter deep feedwell extending well down toward the bottom of the tank. The ratio of depth to tank diameter is adjusted to bring into balance the various functions essential to good clarification. Hydraulically, the flow patterns produced are controlled to make maximum utilization of overall tank volume.

#### Additional Soda Recovery

A further improvement to the System is the addition of a time clock to the green liquor clarifier underflow pump to control re-

moval of a small amount of settled dregs every 15 minutes. A mixing tank with a detention time of 30 minutes insures thorough mixing of dregs and wash water and results in additional recovery of soda values in the dregs washer.

#### Operation Simplified

Selective Density Feeding applied to the Dorr System means substantially lower investment costs, lower maintenance costs, and simplified operation. In existing Systems the green liquor station can be converted to this new unit design and in most cases will give equal performance to that of tray units with the added advantage of greatly simplified operation.

If you'd like more information on these new developments in the Dorr Continuous Reausticizing System, write Dorr-Oliver Inc., Stamford, Conn., or in Canada, Dorr-Oliver Inc., 26 St. Clair Avenue East, Toronto 5.

**For makers of Quality Papers**



Albacel is a bleached pine sulphate . . . the cleanest pulp of its kind available from any source. Chlorine dioxide bleaching gives it outstanding strength and excellent brightness.

Albacel is produced at Riegel Carolina's new pulp mill at Riegelwood, N. C., with every refinement and control known to modern pulp manufacture.

**Riegel Carolina Pulps**

**ALBACEL • ASTRACEL**

**RIEDEL PAPER CORPORATION • 260 MADISON AVENUE • NEW YORK 16, N. Y.**

**SOUTHERN NOTES**

R. E. "BOB" MATTHEWS, paper division sales manager, Ecusta Paper Corp., of Olin-Mathieson Corp., and his family recently toured Western and Southern states. Highlights were visits to company's plants at El Centro, Calif., and Forest Products Div., Shreveport, La. J. E. DRISCOLL has been appointed purchasing agent, paper division, according to W. M. SHAW, assistant to the general

manager. JOHN M. ORGORZALEK, was recently transferred to their chemical assistance group at Pisgah Forest. JOHN D. JONES, has been assigned to the mechanical assistance group of the film div.

STEVE CHASE, production mgr. of the Texas Division of Champion Paper & Fibre, has been named a director of the Pasadena, Tex., chamber of commerce.



**In Industry News**

HARRISON F. DUNNING (left), who presents a "How We're Doing" talk at Scott Paper mills, has been elected a director of that company. He joined Scott in 1935 as an industrial salesman after graduation from Dartmouth. He was former Plant Mgr. at South Glens Falls, N.Y., a Scott subsidiary. He became General Mgr. of paper mills in 1947. In 1951 he was General Mgr. of all Scott mills and was elected Vice Pres.

MALCOLM B. LOWE (center), President of Lowe Paper Co., who is newly elected President of Specialty Paper and Board Affiliates, who held annual session at Paper Week in New York.

RICHARD H. HINMAN (right), member of distinguished paper industry family, is new Asst. Sales Mgr. of International Paper Co.'s fine paper and bleached board division. He joined I.P. as sales apprentice in 1947, and went through mills training, before joining his present division.

EARL L. HOBAUGH, until retirement superintendent of St. Joe Paper Co., succumbed Feb. 5 to a long illness. Funeral services were conducted in Port St. Joe, Fla. Mr. Hobaugh was widely known in southern pulp and paper industry.

**PACIFIC COAST NEWS**

**Ries Dies in Alaska;  
Bob Stevens Moves**

CARL GEORGE RIES, plant engineer for Ketchikan Pulp Co. during construction and since startup last year, died Jan. 18 in Ketchikan, leaving a wife, two sons and a daughter. He had been with the Weyerhaeuser sulfite mill in Everett for several years. He was 50.

ROBERT W. STEVENS, paper mill consultant, announces his new offices in Southern California are at Port Professional Bldg., 211 East Broad St., P O Box B, Port Hueneme, Calif. His phone is Oxnard, Calif. HUunter 5-2741.

ROY C. SIMON is handling coatings technical service for The Dow Company on the Pacific Coast with offices in Los Angeles. He is a native of North Dakota and graduated from North Dakota A.C.

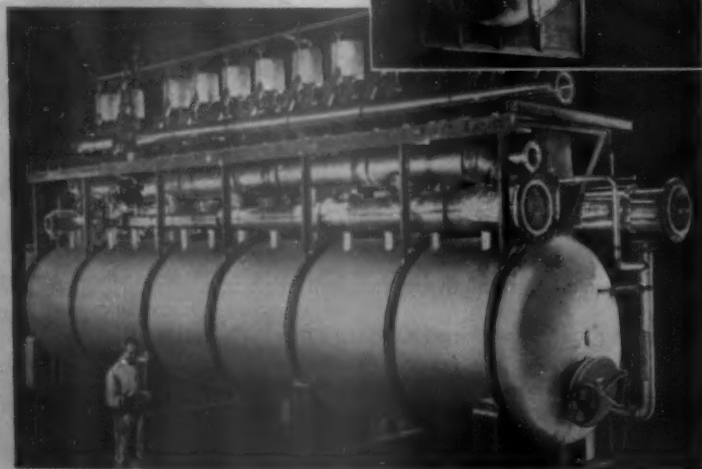
Last month we erroneously spelled the name of the Potlatch executive killed in an Ohio plane accident as H. N. RONNEY, as it appeared in papers. He was HARRY N. ROONEY, of course, the widely known Potlatch purchasing agent and more recently assistant to Pres. W. P. Davis. **Continued on page 22**

**A NEW VARIATION  
OF THE**

**Deculator  
Cleaner**

**PROCESS**

**FOR SPECIAL APPLICATIONS**



★ This new installation introduces a variation of the DECULATOR-CLEANER process for use on machines where it is desirable to clean the furnish at a consistency higher than minimum headbox consistency. The stock is cleaned and deaerated at the consistency for most efficient cleaning. Additional white water for dilution is deaerated and effectively mixed with the stock in the DECULATOR receiver. The result is a substantial saving in horsepower for deaeration and cleaning.

**THE ROTAREAD CORPORATION** represented by

**CLARK & VICARIO CO.**

Bronxville, N. Y.



# 6

# B&W

## RECOVERY UNITS SERVE 3 MILLS OF



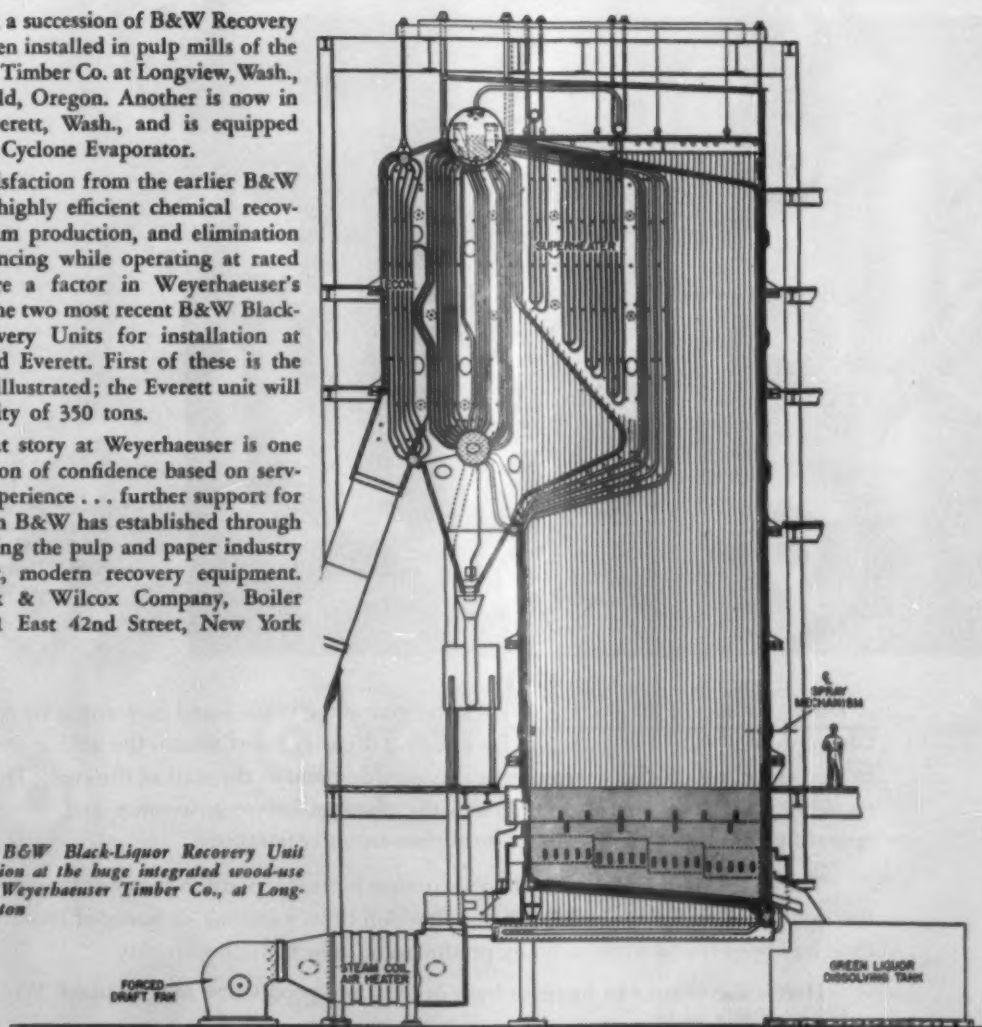
## WEYERHAEUSER

Since 1945, a succession of B&W Recovery Units have been installed in pulp mills of the Weyerhaeuser Timber Co. at Longview, Wash., and Springfield, Oregon. Another is now in service at Everett, Wash., and is equipped with a B&W Cyclone Evaporator.

Service satisfaction from the earlier B&W Units—their highly efficient chemical recovery, high steam production, and elimination of routine lancing while operating at rated capacity—were a factor in Weyerhaeuser's selection of the two most recent B&W Black-Liquor Recovery Units for installation at Longview and Everett. First of these is the 300-ton unit illustrated; the Everett unit will have a capacity of 350 tons.

This repeat story at Weyerhaeuser is one more indication of confidence based on service-proved experience . . . further support for the reputation B&W has established through years of serving the pulp and paper industry with efficient, modern recovery equipment. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

*New 300-ton B&W Black-Liquor Recovery Unit now in operation at the huge integrated wood-use center of the Weyerhaeuser Timber Co., at Longview, Washington*



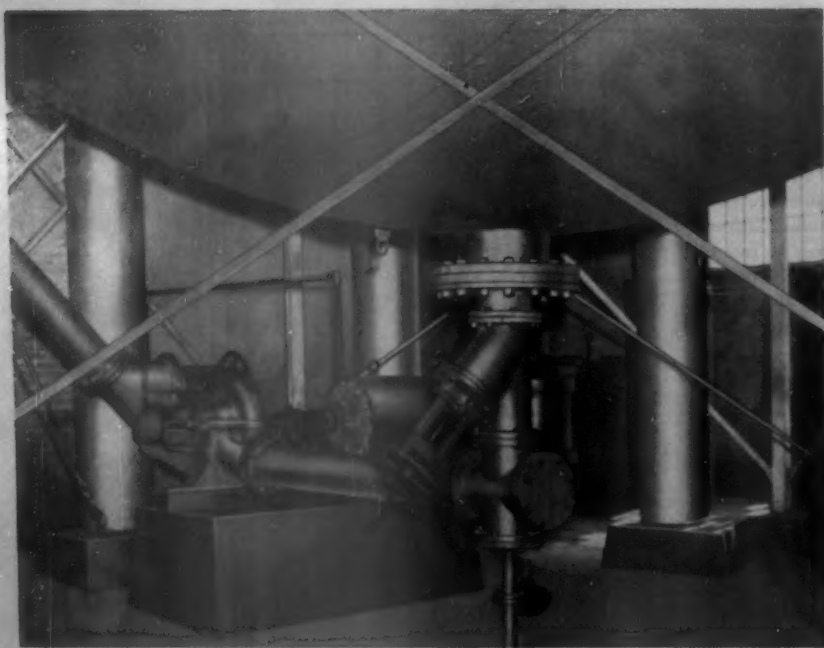
## BABCOCK & WILCOX

# *2,000 lb. Less Steam*

**Per Ton of Pulp**

# *1½ Hr. Less Cooking Time*

**with the Chemipulp Hot Acid System**



Bottom of the Hot Acid Accumulator—the heart of the Chemipulp Hot Acid Cooking System—installed at the Franconia Paper Corp., Lincoln, N. H.

***A Direct Saving of \$3 per Ton:*** That's the guarantee made—and met—on a recent Chemipulp Hot Acid installation. By utilizing digester relief steam, the acid is preheated—leveling off the enormous peak steam demand at the start of the cook. This recovery under pressure also minimizes the changes between summer and winter operating conditions—results in uniform year-around operation.

The Chemipulp Hot Acid System also either increases plant capacity or improves the quality of the pulp—or BOTH. A reduction of as much as 1½ hours of cooking time has been made while actually producing a pulp of higher quality.

Here's the chance to increase both quality and production in your plant. Write today for full details.

## **Chemipulp Process Inc.**

Woolworth Bldg., Watertown, N. Y.

*In Canada: Chemipulp Process Ltd., Crescent Bldg., Montreal*

*Pacific Coast: A. H. Lundberg, Orpheum Bldg., Seattle 1, Wash.*

# indanthrenes®

*for Fine Papers*

*fastest to light, acid, alkali, chlorine*

When the ultimate in fastness is required—INDANTHRENES are eminently suited for tinting high grade papers manufactured from raw materials possessing a high degree of permanence.

Indanthrene Paper Blue RPZA Pdr.

Indanthrene Paper Blue GWP Pdr.

Indanthrene Paper Violet 4RW Pdr.

represent superior vat pigments which exhibit excellent fastness properties on all types of bleached pulps. Being water dispersible powders they may be added dry to the beater or used in stock solutions without danger of causing color specks.

Our sales and technical service representatives can provide the answers to all your paper tinting problems promptly. Write for samples and technical literature.



*From Research to Reality*

**GENERAL DYESTUFF COMPANY**

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION  
435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • LOS ANGELES • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PITTSBURGH • SAN FRANCISCO

### PACIFIC COAST NOTES

**VERN KARNS**, starchmaker and solutions man for No. 15 machine at CZ Camas, was presented with \$1385 suggestion award check, 20% of computed one-year savings resulting from a starch-saving suggestion.

**WILLIAM BRADY** is production manager for St. Regis bag plants at Los Angeles, Tacoma and San Leandro, Calif.

**GORDON PETRIE**, recovered from a recent appendectomy, has now taken over full representation of the Bagley-Sewell division of Black-Clawson Co., as well as all other B-C divisions as its Pacific Coast manager, 219 Mayer Bdg., Portland, Ore.

**G. H. LeCUYER** has been named sales manager of converting department for Everett Pulp & Paper Co., according to announcement by **DONALD McCALL**, v. p. and gen. mgr.



### In Pacific Coast News

**ANDY C. PERRIN** (left), District Mgr. for West Coast for Reliance Electric & Engineering Co., who moved offices to larger quarters at 128 North B. St., San Mateo, Calif. Phone is same: Diamond 4-2569. Mr. Perrin also announced appointment of Jack Crichlow as sales engineer.

**JAMES D. MORAN** (center), new Staff Assistant to Vice Pres. and Gen. Mgr. Geo. J. Pecaro of The Flinkote Co., Pioneer Div., Los Angeles. A graduate of Notre Dame and Columbia, a wartime Capt. in Marines, Mr. Moran will specialize in legal matters.

**DEAN H. BANTA** (right), who was promoted to Asst. Gen. Mgr., Inland Empire Paper Co., serving under Pres. and Gen. Mgr. Charles A. Buckland. Position of Mill Mgr., held by late Myron Black, was eliminated. Hardie J. Forkner was promoted to Asst. Gen. Supt.

**JACK WILCOX**, process equipment division mgr. for Electric Steel Foundry, **HALVAR LUNDBERG**, Seattle chemical consulting engineer, and **KEN JONES**, Northwest manager for J. O. Ross Engineering Corp., were among Far Westerners who went to Paper Week in New York.

**DAVID C. FULTON**, widely known in the Pacific Coast pulp and paper field when he was Westinghouse representative in Portland, Ore., has been named manager of marine sales for the steam division of Westinghouse, moving to Pittsburgh from San Francisco.

**HUGH GARDNER**, Pacific Coast representative of Buckman Laboratories, Portland, Ore., and Mrs. Gardner have a new baby girl named Thames Leigh.

**JOHN M. VICTOR**, paper mill supt. St. Regis Ascoma, was named "Papermaker of the Month" in the Noble & Wood Agitator. He has had 35 years of paper-making in many mills.

**RICHARD DUNCAN**, working at Coos Bay Pulp Corp. log dump at Empire, Ore., made the newspapers all over the country by jabbing his pike pole into a fish and hanging on until getting a rope around the tail and hoisting it out with log winch. It was a 15-ft. shark.

**FRANK A. DRUMB**, CZ assistant vice president, Portland, Ore., was hospitalized in January for major surgery. He returned to work in mid February.

Continued on page 28

Too  
Many  
Hot  
Jobs!



But we're Building  
...for a Greater Future



On December 11th, 1954 our plant was destroyed by fire. At this time we are on a reduced production schedule, but will soon be under full scale operation to fulfill the requirements of the processing industries.

**NORTHWEST  
COPPER  
WORKS**

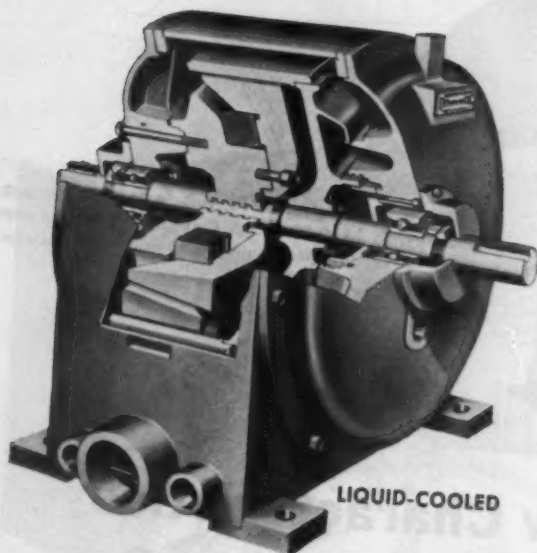
1303 N. RIVER STREET  
PORTLAND 12, OREGON

PHONE MURDOCK 2191

**There are Hundreds of Uses for**

**DYNAMATIC**

## **EDDY-CURRENT BRAKES**



**LIQUID-COOLED**

Wide range of torque capacities and operating speeds. Smooth, frictionless, shock-free operation. No rotating electrical components or contacts. Electronic or magnetic amplifier control from AC power.

### **Here Are Some Suggestions**

Providing constant tension or constant linear feet per minute speed for unwind stands in metals, fabric, plastic, and paper industries.

For accurately controlling lifting and lowering functions of cranes and hoists by creating an opposed load on a wound rotor motor.

Smooth stopping of high inertia masses; precise control of deceleration with automatic or manual controls.



**AIR-COOLED**

Providing a controlled load for the production testing of engines, transmissions, or axles.



# **EATON**

Send for Your Copy of Our New Illustrated Bulletin No. BR-1

**DYNAMATIC DIVISION**

**MANUFACTURING COMPANY**

3307 Fourteenth Ave. • Kenosha, Wisconsin

General Offices: Cleveland, Ohio



Bailey Control Drive, Type AC44P Model 200. Only \$210.00 F.O.B. Cleveland, complete with enclosure, positioning relay and hand operator.

## Want Better Flow Characteristics from Your Regulating Devices?

This new, small, piston-operated Bailey Control Drive will improve the flow characteristics of butterfly valves, dampers, hydraulic couplings, feeders and similar regulating devices. Adjustment is simple; any desired relation between drive motion and pneumatic signal may be secured.

You can install this compact pneumatic drive power unit in any position on a column, pipe, or flat surface—and connect it to the regulating device with standard Bailey linkage, available from stock.

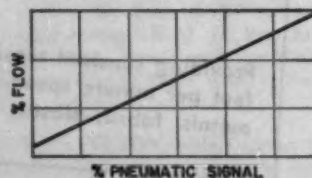
Speed (time required for full travel) is adjustable to suit your requirements. Bailey Control Drives operate on standard SAMA pneumatic signal ranges of 3 - 15 or 3 - 27 psig.

### AVAILABLE FROM STOCK in 3 standard sizes

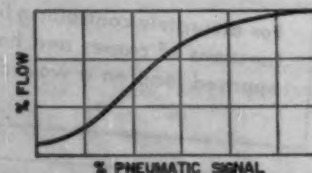
Type	Piston Dia. Inches	Piston Stroke inches	Torque ft-lb	Max. Travel Degrees	Approx. Dimensions Inches
AC816	8	16	1500	90	13 x 27 x 51
AC68	6	8	400	90	13 x 19 x 34
AC44	4	4	75	75	10 x 11 x 19

P-28

### The New Bailey Control Drive gives you THIS—



### Instead of THIS



**BAILEY**  
METER COMPANY

1037 IVANHOE ROAD

CLEVELAND 10, OHIO

*Complete Controls for Process Plants*

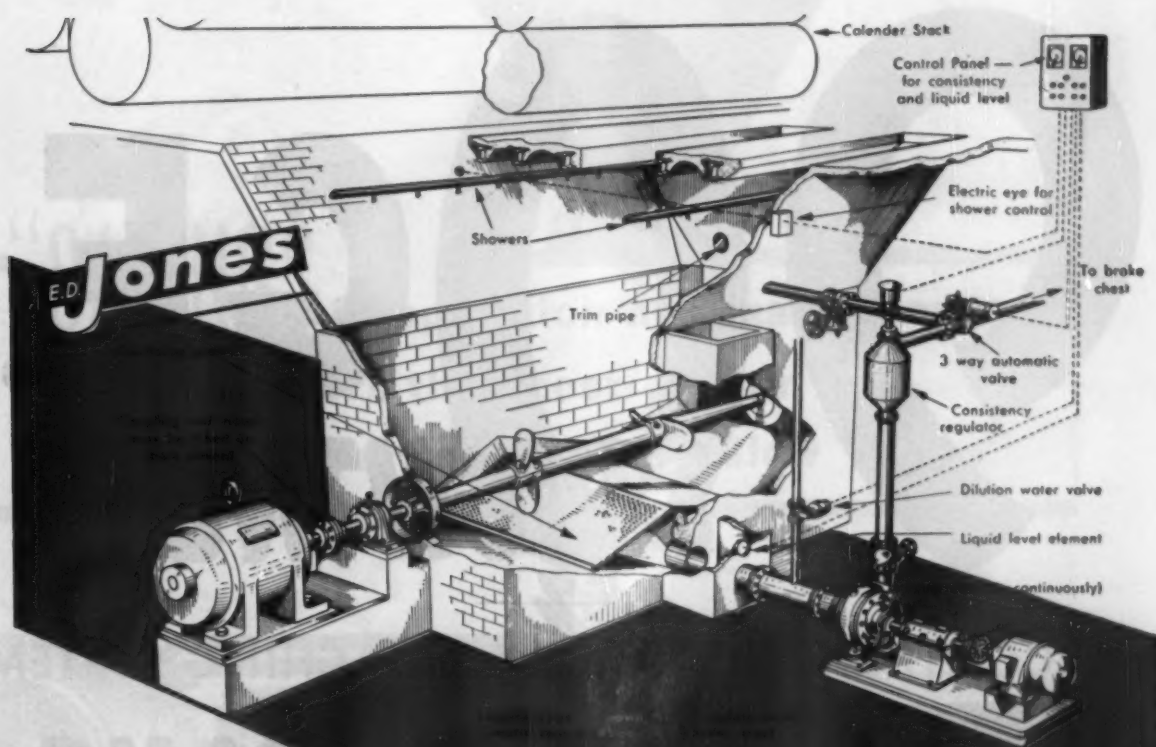


*Controls for*  
TEMPERATURE  
PRESSURE  
GAS ANALYSIS  
FLOW LEVEL  
RATIO

### FOR MORE INFORMATION FILL OUT AND MAIL

- ☐ I am interested in Bailey Control Drives. Mail me Spec. P81-1.  
☐ I am interested in Bailey Control Linkage. Mail me Spec. P81-5.

Name \_\_\_\_\_  
Title & Company \_\_\_\_\_  
Street & Number \_\_\_\_\_  
City & Zone \_\_\_\_\_ State \_\_\_\_\_



#### Low cost

Low in first cost; low in operating cost; low in construction throughout.

#### Ideal for slushing

If pulp reduction for subsequent treatment is your problem, Liebeck is your answer.

#### Easily serviced

Non-corrosive; easy to keep clean. Easily serviced heavy-duty bearings; permanent tile block tanks.

#### Broke handled automatically

Provides continuous low cost pulping of broke as it accumulates — no special operators required.

#### Essentially simple

Only one moving part — the horizontal shaft — with V-belt, chain, gear reducer or direct drives.

#### Custom designed

Almost any size . . . to fit your problem, and your available space. Can utilize very low headroom.

#### Known performance

Testing under mill conditions and fully automatic controls insure dependable uniform performance.

Ask your Jones representative, or write direct for Bulletin EDJ-1061.

**E.D. Jones**

**E. D. Jones & Sons Company, Pittsfield, Mass.**

**BUILDERS OF QUALITY STOCK PREPARATION MACHINERY**

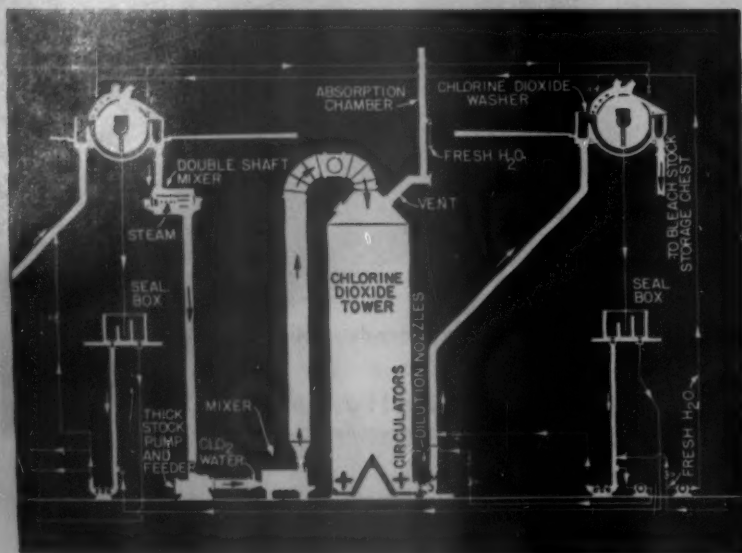
In Canada: The Alexander Flock Limited, Ottawa

# 900 G.E.

## BRIGHTNESS

*with*

IMPCO CHLORINE DIOXIDE BLEACHING SYSTEM



## PLUS

- Highest Brightness
- Excellent Pulp Quality
- No Strength Loss
- Low Chemical Costs
- Reduced Pulp Shrinkage
- Lower Solids to Sewer
- Fits Any Existing System

With the advent of chlorine dioxide bleaching in the United States, IMPCO studied the problem carefully and tailored the first working high density system. This pioneering unit was installed in a prominent mid-southern kraft mill with outstanding results. Since that time IMPCO systems have gone into operation on soda, sulphite and semi-chemical pulp. This continuous high density process has produced successful results from the very beginning and today 22 IMPCO systems are bleaching over 6000 daily tons of high brightness quality pulps. We welcome the opportunity to work with you.

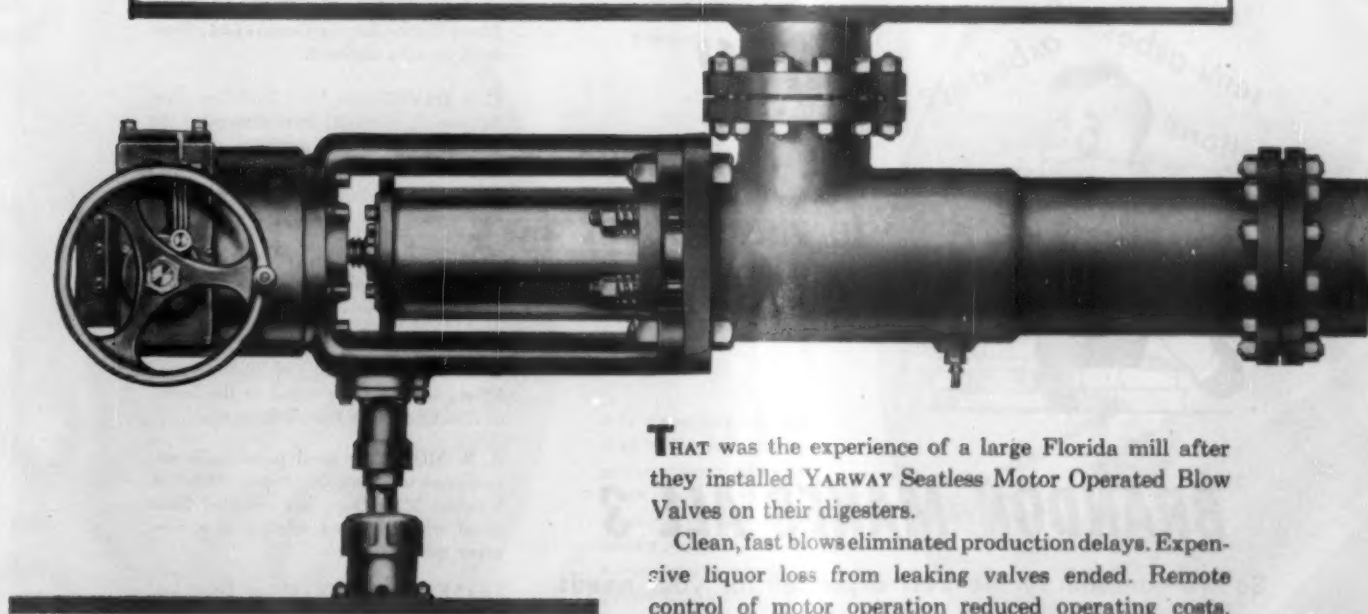


**IMPROVED  
MACHINERY INC.**

NASHUA, NEW HAMPSHIRE

*Sherbrooke Machineries Limited manufacture similar equipment in Canada*

**"SAVINGS** in operation and maintenance  
first year more than cost of four  
**Yarway Digester Blow Valves"**



**T**HAT was the experience of a large Florida mill after they installed YARWAY Seatless Motor Operated Blow Valves on their digesters.

Clean, fast blows eliminated production delays. Expensive liquor loss from leaking valves ended. Remote control of motor operation reduced operating costs.

Continued satisfaction has resulted in installation of additional YARWAY Digester Valves for expanded plant facilities.

Such records are not unusual and new features like the YARWAY 17/4 PH stainless steel plunger and automatic lubricator, combined with improved operating control, make YARWAY Seatless Digester Blow Valves an even better buy today.

You may choose between hydraulic-cylinder or electric motor operated valves, all remotely controlled.

**YARNALL-WARING COMPANY**  
103 Mermald Avenue, Philadelphia 18, Pa.  
BRANCH OFFICES IN PRINCIPAL CITIES

For the full story  
on Yarway Seatless  
Digester Blow Valves  
write for this free Bul-  
letin B-440.



**YARWAY**

**digester blow valves**

## PULP & PAPER

### PERSONALS — Continued

#### PACIFIC COAST NOTES

EUGENE P. VASSAR transferred from Fibreboard's Antioch, Calif., plant to the company's San Francisco headquarters to become cost and plant accounting manager.

EDWARD M. LEMON is new West Coast rep. for Barrett Division, Allied

Chemical & Dye, at 923 East 3rd St., Los Angeles. He has degrees from Illinois and Western Illinois and joined Barrett in St. Louis in 1948.

H. J. "JIM" WARD is a recent addition to the sales engineering staff of Bumstead-Woolford Co., Seattle, representatives for Foxboro Co. in the Pacific Northwest. He was with Potlatch Forests, Inc., Lewiston, Ida.



**NOW!**  
you don't have  
to guess about  
dryer felts

## BRANDON MAKES ALL 3

So we can specify the best dryer felt for your needs

Don't guess at a dryer felt, then hope it's right. Be positive of your dryer felt the first time by obtaining an unbiased opinion from those who know the advantages of all three types of dryer felts.

Brandon manufactures all three, so we have no reason to specify any but the correct dryer felt for your plant.

For immediate attention  
to your dryer felt problems, write:

Brandon Sales, Inc.  
Drawer 1, Branwood Station  
Greenville, South Carolina

Representatives:  
Northern and New England States  
Orton Corporation, Fitchburg, Mass.  
Midwestern States  
Frank Clawson, Kalamazoo, Mich.  
West Coast  
M. J. Maguire, Portland, Oregon  
Southern States  
R. S. (Bob) Davis, Greenville, S.C.

# BRANDON

## DRYER FELTS

#### CANADIAN NEWS

##### Lewis Mgr. at Rupert; Mitchell Joins Rosenblad

JOHN G. LEWIS has been appointed manager of Columbia Cellulose Co's pulp mill at Prince Rupert, and ROY O. EVANS is new general supt. "Grady" Lewis had been assistant manager and was formerly with Rayonier's Fernandina, Fla., division as chief chemist.

G. R. W. (GERRY) MITCHELL, formerly assistant superintendent at Anglo-Newfoundland Pulp & Paper Co's sulfite mill at Grand Falls, Newfoundland, has been appointed manager for the Rosenblad Corp. of Canada, Montreal.

L. I. FITZPATRICK, of Ottawa, formerly with Alexander Fleck Ltd., has joined Black-Clawson Canada Ltd., Montreal, as sales engineer.

C. B. DAVIES, Box 1083, Rothesay, New Brunswick, Canada, has announced he has resigned as mill manager of Irving Pulp & Paper Ltd. He had been with Eddy Co. for years. He had made no future plans.

T. R. MOORE has been appointed general manager of Anglo-Newfoundland Development Co., Grand Falls, Newfoundland.

CONLEY BROOKS, of Minneapolis Minn., has been appointed to the board of directors of the Powell River Co.

R. R. MOREY, general paper mills superintendent, Canada Paper Mills at Windsor Mills Que., has returned from Natal where he was advisor to a new paper mill.

FRANK W. JOHNSON has been appointed manager of personnel for Consolidated Paper.

DAVID J. GLEN, C.A., F.C.I.S. has been elected secretary of Consolidated Paper Corp.

E. R. McMULLEN, M.E.I.C. has been elected chairman of the St. Maurice Valley Branch of the Engineering Institute of Canada. Mr. McMullen is general superintendent of the Laurentide division of Consolidated Paper.

H. R. MacMILLAN, chairman of the board, MacMillan & Bloedel, Vancouver, B. C., has been appointed a vice president of the Canadian Bank of Commerce, which he has served as director for several years, an unusual honor for anyone not a full-time banker. Mr. MacMillan is also president of British Columbia Packers and a director of Dominion Tar & Chemical Co., International Nickel Co. and other large industrial corporations.

# DOWNINGTOWN

*Celebrates their*

# 75

*Years of Progress*

IN

*Paper Machinery Manufacture*

1880 • 1955



It is generally agreed that in the last 75 years greater progress has been made in the manufacture of paper and board products than was accomplished in the preceding 2000 years. Downingtown, this year celebrating its 75th Anniversary, has been continually in the forefront of this progress, contributing many "firsts" to improve quality, speed production and lower costs in the great American paper industry.

Downingtown is dedicated to continue these contributions this year and in many years to come.

Downingtown Manufacturing Co.  
Downingtown, Pa.



# DOWNINGTOWN

DESIGNERS AND BUILDERS OF PAPER, BOARD AND FELT MACHINES

# 75<sup>th</sup> year

West Coast Subsidiary:  
MONARCH FORGE & MACHINE WORKS, INC.  
Portland 10, Oregon

Representative: UNITED STATES MACHINERY CO., INC., 90 Broad St., New York 4, N.Y., JOHN V. BOSLUND, Pacific Bldg., Portland 4, Ore., THE EMERSON MFG. CO., Lawrence, Mass., ROEMING-WATEROUS, LTD., Bradford, Ont., Can.

## **producers of machinery and systems for every pulp and paper making process**

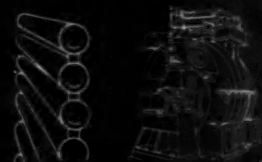
The most complete and diversified line of equipment for turning trees into paper products comes from the specialized engineering and manufacturing skills of the various divisions of The Black-Clawson Company.

Within this world-wide organization, the pulp and paper industry finds a vast store of knowledge and experience unequalled anywhere; the most versatile group of paper mill machinery engineering specialists ever assembled . . . precision manufacturing facilities and personnel producing everything from small valves to giant paper machines.

This is Black-Clawson . . . old in years, young in ideas . . . a closely-knit, smoothly functioning team serving the entire industry through the ability to take undivided responsibility for design, production, erection and performance of all the equipment needed in a modern pulp or paper mill.

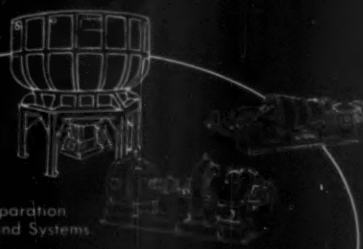
# **This is Black-Clawson**

Pulp Mill and Bleaching Equipment

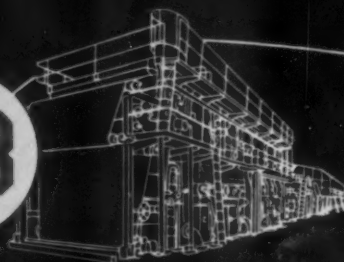


**PANDIA**

Stock Preparation Machinery and Systems

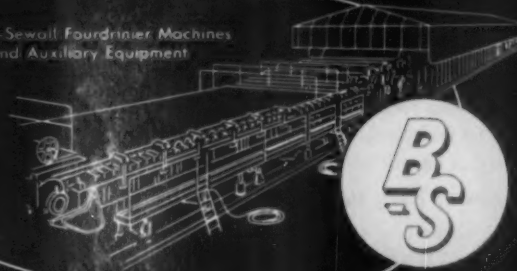


**SHARTLE**

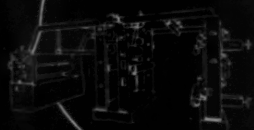


Cylinder Board Machines and Auxiliary Equipment

Bagley-Sewall Fourdrinier Machines and Auxiliary Equipment



Paper and Plastic Converting Machinery



Black-Clawson International, Limited  
Serving Foreign Markets



Black-Clawson (Canada) Limited,  
Serving Canada



**THE BLACK-CLAWSON COMPANY**

Black-Clawson Division, Hamilton, Ohio  
Shartle Bros. Machine Division, Middletown, Ohio  
Dills Machine Works Division, Fulton, N. Y.  
The Bagley-Sewall Corp. Division, Watertown, N. Y.  
Pandig Inc. Division, New York, N. Y.  
Black-Clawson International, Limited, Division, London W.1, England  
Black-Clawson (Canada) Limited, Montreal, P.Q., Canada

# Caustic Soda—

which strength should you buy?

Here are the facts to help you decide which saves you more—50% or 73%

Can you save by switching from 50 to 73% liquid caustic? Your answer will depend on:

1. Your caustic soda freight rate.
2. Your facilities for handling caustic.
3. The amount of caustic you use.

#### Advantages of 73% liquid

1. With 73%, there is a substantial saving in freight charges. 63% less water is shipped per unit weight of dry caustic soda.
2. You will place fewer orders. This cuts down on your billing work.

#### Disadvantages of 73% liquid

1. It is priced \$2.00 more per ton (dry basis) than 50% because of higher manufacturing costs.
2. If you store it as 73% liquid, you will need heated, nickel-clad steel storage tanks.
3. If you dilute 73% to 50% while unloading, you will need a cooler and other equipment. This represents a considerable investment which can be reduced if you have

suitable equipment already on hand.

Use this table to see if you can save with 73%

Use the table at right to find your approximate saving on freight charges with 73% liquid caustic. The table balances two cost factors . . . lower freight charges and the higher initial price of 73% liquid caustic.

To estimate your yearly savings, multiply the figure in the right-hand column which applies to you by your annual consumption in tons (dry basis).

From these savings you will have to deduct the cost of equipment for diluting to 50% while unloading.

Freight rate per hundred weight in cents (including taxes)	Net savings per ton (dry basis) in dollars
5	minus 1.40
10	minus .80
15	minus .10
16	0
20	.60
25	1.20
30	1.80
35	2.40
40	3.00
45	3.70

#### HERE'S HELP—WITHOUT COST

You gain much by choosing the right strength for your conditions. In coming to a decision, why not give yourself the advantage of unbiased expert technical help?

A call to your nearest Hooker sales office puts at your disposal, without obligation, the experience gained in 50 years of supplying caustic soda to industry.

Your Hooker technical service man can show you what equipment you need for converting,

and help you figure your exact savings. Why not phone or write him today at the nearest Hooker office?

\* \* \*

"CAUSTIC SODA BUYER'S GUIDE" is the title of a new pocket-size booklet we will be glad to send you. Contains helpful facts on the economics of 50% and 73% solutions; other forms of caustic soda; capacities of tank cars and other containers; useful shipping information. Write for a copy.

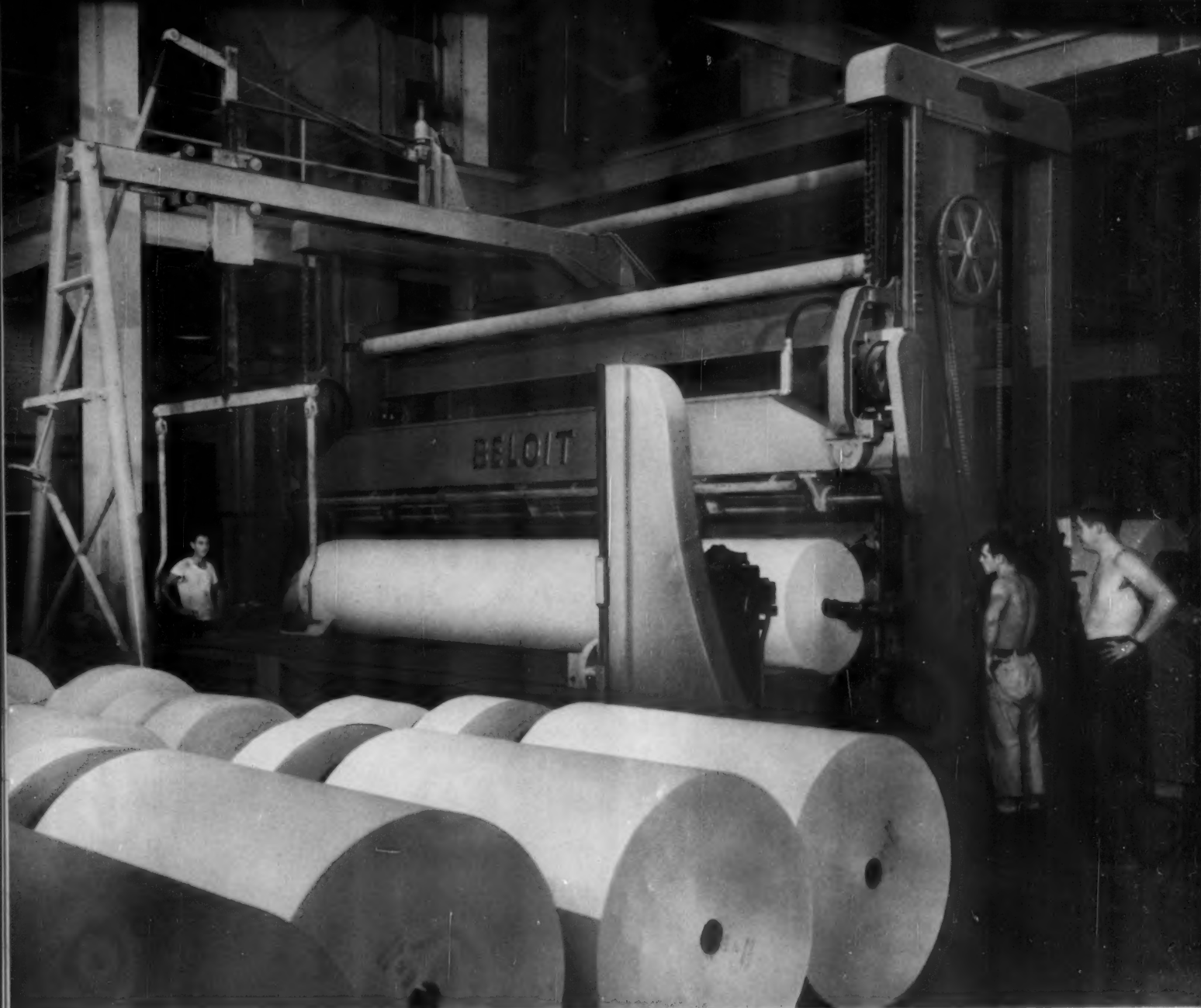
**HOOKER  
CHEMICALS**

1905—Half a Century of Chemicals from the Salt of the Earth—1955

**HOOKER ELECTROCHEMICAL COMPANY**

15 FORTY-SEVENTH ST., NIAGARA FALLS, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES



**HIGH-SPEED, HEAVY-DUTY** Model "L" Winder is successfully handling the newsprint production of the No. 1 Beloit machine at Bowaters Southern, Calhoun, Tennessee. Every detail has been designed for economical, high-speed production and ease of operation. Clean-cutting shear slitters and positive control of roll hardness and uniformity give highest quality rolls.—*Beloit Iron Works, Beloit, Wis.*

# BELOIT

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!

**PAPER MACHINERY**



# ROLLS

**RIGIDLY SUPERVISED**  
*from pouring pit  
to paper mill*



## CHILLED IRON AND ALLOY CHILLED IRON ROLLS

LOBDELL UNITED manufactures a wide variety of rolls for the Paper and Allied Industries . . .

Comprehensive technological experience, advanced engineering skill, modern production facilities and recognized leadership in the design and construction of rolls are your guarantee of complete satisfaction. Lobdell Plain Chilled Iron Rolls have a uniformly hard surface highly resistant to abrasion and deformation under load. They give longer service for machine calendering. Alloy Chilled Iron Rolls for water finish or high pressure stacks are harder and more resistant to corrosion and abrasion than ordinary rolls.

When planning replacements or installation of new equipment, you'll find it advantageous to specify LOBDELL UNITED.

Detailed information gladly sent upon request.

## MICROMETER ROLL CALIPERS

Light weight permits easy handling by one man, and they are readily adjusted to a wide range of roll diameters. Micrometer dial is graduated in thousandths.



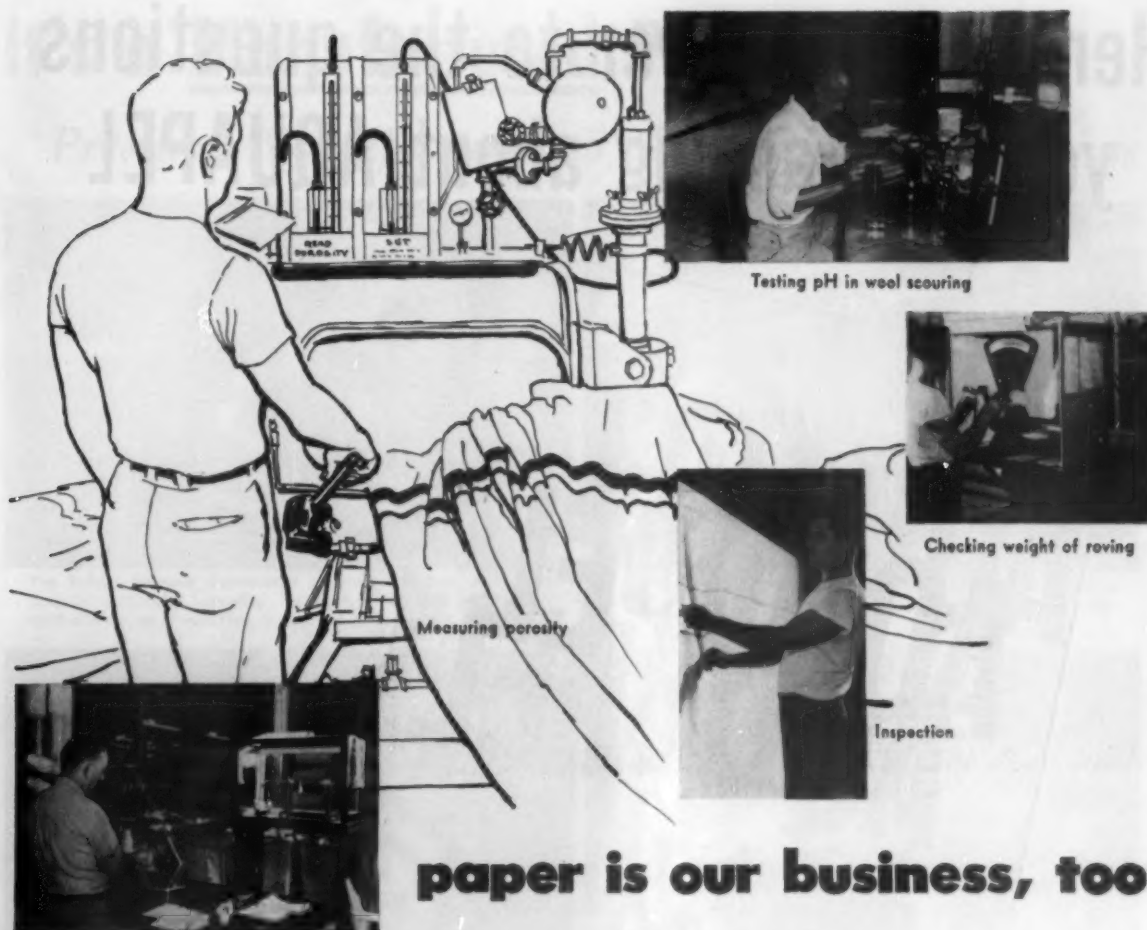
- CHILLED IRON ROLLS
- MACHINE CALENDER STACKS
- ROLL GRINDING MACHINES
- ROLL CALIPERS
- KNIFE GRINDERS
- ABRASIVE CUT-OFF SAWS

1836

**LOBDELL UNITED DIVISION**

UNITED ENGINEERING AND FOUNDRY COMPANY  
WILMINGTON 99, DELAWARE

1955



## paper is our business, too

Testing spun yarn

### Over 120 separate tests assure trouble-free felts

As part of our constant endeavor to produce better felts for better papermaking, Albany Felt Company maintains the most thorough and rigid quality controls. Throughout every manufacturing operation . . . sorting the raw wool, scouring, blending, carding, spinning, weaving and finishing . . . constant checks are made to assure top quality and uniformity. An Albany felt must pass more than 120 of these check points before it is ready for delivery . . . your assurance

of the finest felts modern methods can produce!

**Paper is our business, too**, for every Albany felt is custom-designed and made to meet specific requirements of an individual machine for finish, drainage and trouble-free performance.

The result: **MORE SALEABLE TONS PER DAY!**



**FREE!** Felt Performance Record Book for Mill Superintendents, Managers, Purchasing Agents. Write for your handsome leather binder containing convenient forms for maintaining records and graphs of felt performance, felt inventory, etc.



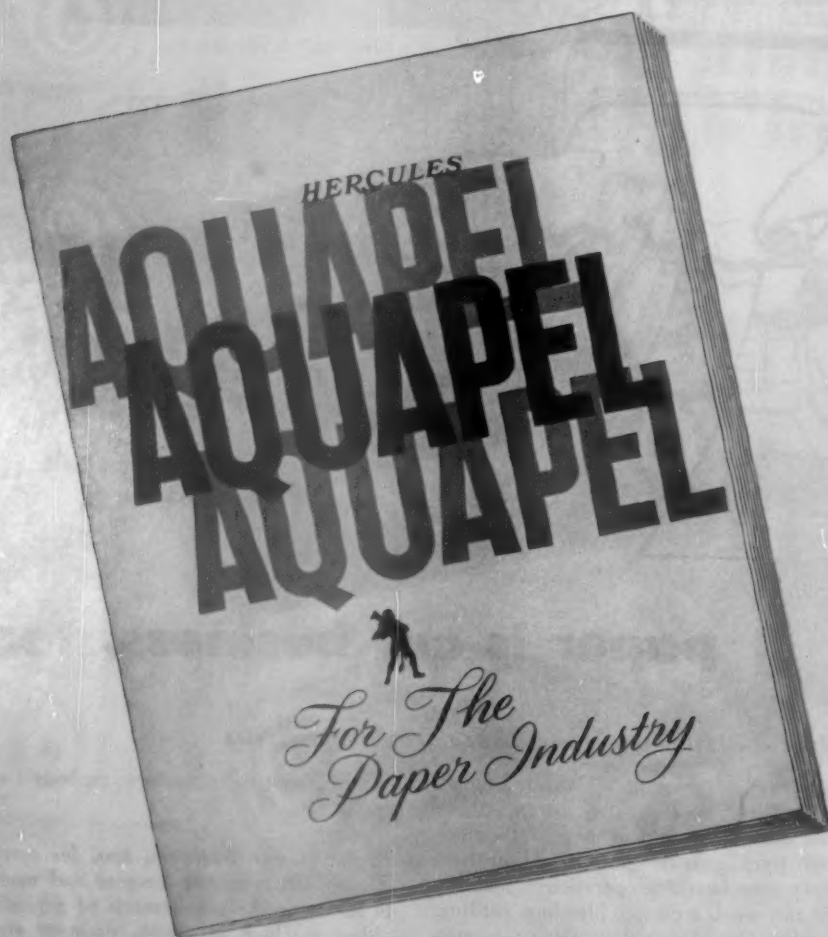
## ALBANY FELT COMPANY

*"World's largest Manufacturer of Paper Machine Felts"*

**MAIN OFFICE AND PLANT, ALBANY 1, NEW YORK**

Other plants: Hoosick Falls, N. Y., North Monmouth, Maine, Cowansville, Quebec.

# Here's the answer to the questions you'll be asking about AQUAPEL



This newly published booklet contains the answers to the questions you'll be asking about Aquapel®—a unique non-rosin, non-wax size for paper and board that is the latest addition to the Hercules family of papermaking chemicals.

Primarily intended for surface application as an emulsion, Aquapel 380 is not a "surface size" in the usual sense because it replaces rather than supplements beater sizing with rosin and alum.

Two to six pounds of Aquapel per ton of fiber will provide a very hard sizing without rosin or alum over a wide pH range. Aquapel gives excellent resistance to alkalis, lactic acid, and other strong chemicals, making paper and board suitable for many diversified end uses.

For technical information on Aquapel and details on availability, write Hercules.



Paper Makers Chemical Department  
**HERCULES POWDER COMPANY**  
965 King St., Wilmington 99, Del.

HERCULES TRADEMARK

PP55-1

# It's a Manufactured Pulpstone...

*Precision Manufactured to Meet Your Requirements*



The Norton Research Laboratories play an important part—not only in continually improving the Norton Pulpstone but in the routine checking of materials quality.



From the Norton Electric Plants come the abrasives used in making the Norton Pulpstone—here you see a resistance type furnace producing CRYSTOLON abrasive.



The Most Modern Factory Equipment is used in making the Norton Pulpstone. Here a workman is weighing out the exact amount of abrasive and bond required for molding a segment.



Final Assembly of the Molded Segments is done by workmen long skilled in this exacting job. This is followed by careful truing of the completed stone in a gigantic lathe.

**T**HE Norton Pulpstone is not an "artificial" stone—it is a real precision *manufactured* pulpstone—carefully engineered to meet your special requirements. First the abrasive is *manufactured* in the Norton electric furnace plant—from bauxite ore if it is an ALUNDUM stone or from silica sand and metallurgical coke if it is CRYSTOLON stone.

Then in the mile-long Norton Worcester plant, the world's largest grinding wheel plant, the abrasive is mixed with suitable bonds and molded into segments. After being kiln-fired the segments are assembled to form the final stone. Every step in the manufacturing process is under careful quality control and every element in your stone is exactly tailored to meet your particular requirements.

**NORTON COMPANY, WORCESTER 6, MASS.**

Norton Company of Canada, Ltd., Hamilton, Ontario



**NORTON**  
PULPSTONES

*Making better products... to make other products better*

Abrasives - Grinding Wheels - Grinding and Lapping Machines - Refractories - Porous Mediums - Non-slip Floors - Norbide Products

# Stebbins Linings...

## Important in Chlorine Dioxide Bleaching

Approximately 90% of the pulp bleached with chlorine dioxide in plants now operating or under construction will be processed in equipment lined by Stebbins.

Stebbins-lined chlorine dioxide reactors, generators, absorbers, storage tanks and bleach towers, including the very first installation, are giving excellent service.

The pulp industry can depend on Stebbins' experience, research, engineering and construction know-how to meet the requirements of new processes.

SINCE 1884  
Specialists in  
Design,  
Installation  
and Servicing  
of Linings and  
Tile Tanks

### STEBBINS

Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. — 1504 TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. — CASTLE BLDG., MONTREAL, CANADA



IN DETROIT...



## Crowley's

ad-about-town catches the eye  
wherever it goes

Shrewd retailers, Crowley's. They've chosen a color uniquely their own, to make every package from Crowley's a "traveling advertisement" that will attract attention all over Detroit.

It'll pay off in orders — and reorders — if you help your retailer-customer select a color uniquely *his* own. He'll want that color used on wrapping paper, bags, boxes, gummed tape — every kind of packaging material you sell.

You can offer a wide range of shades, in adapting a distinctive "store-color" for each prospect. For technical assistance in developing a color or selecting the proper dye, simply write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

**FOR MAXIMUM ECONOMY**

*Du Pont basic dyes*

**FOR MAXIMUM SOLUBILITY**

*Du Pont acid dyes*

**FOR MAXIMUM LIGHT-FASTNESS**

*Du Pont dispersed organic pigments:*

"Monastral" • Fast Blues, "Monastral" • Fast Greens, "Lithosol" • Pigments

\*REG. U. S. PAT. OFF.



*Du Pont Dyes*

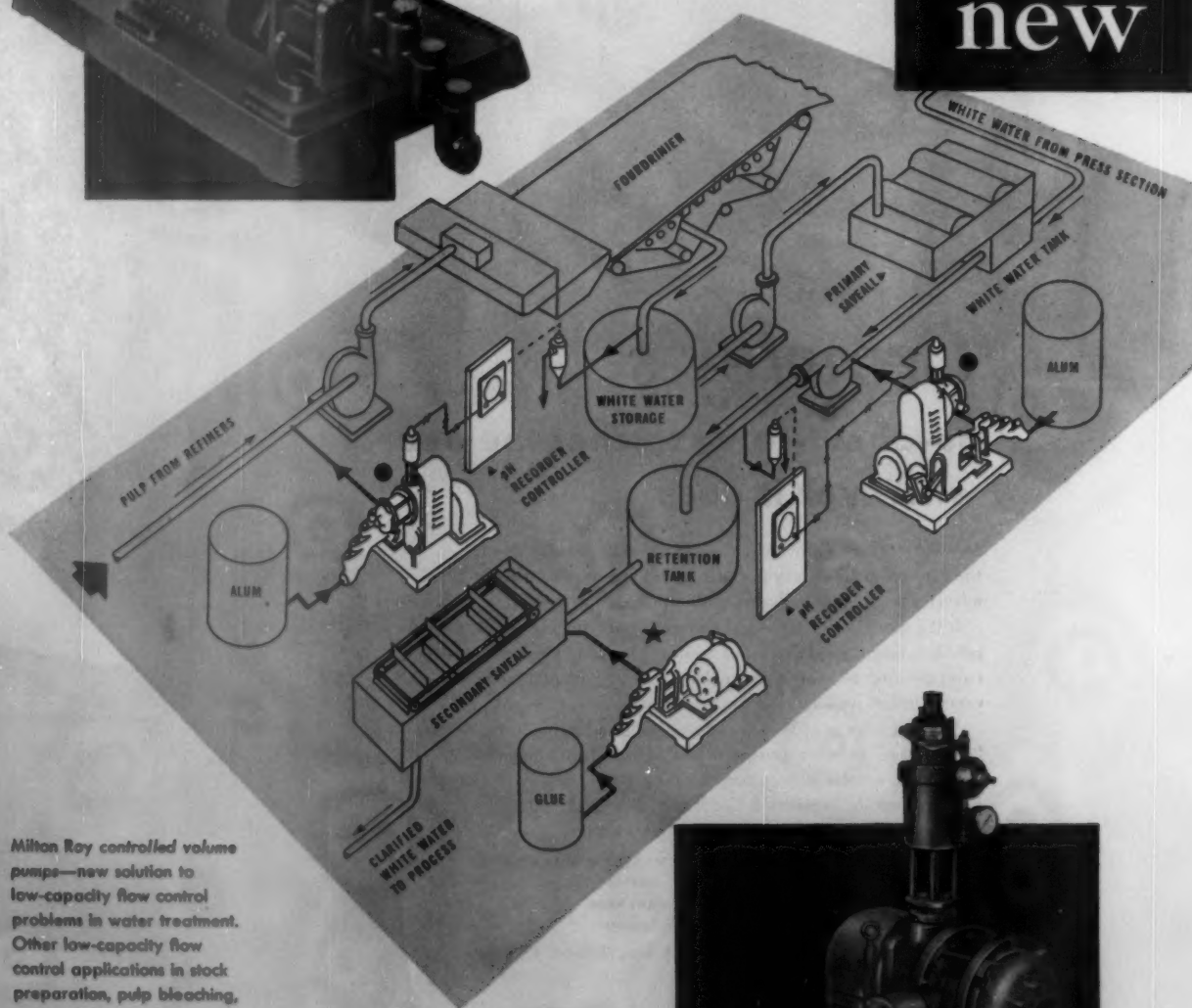


BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



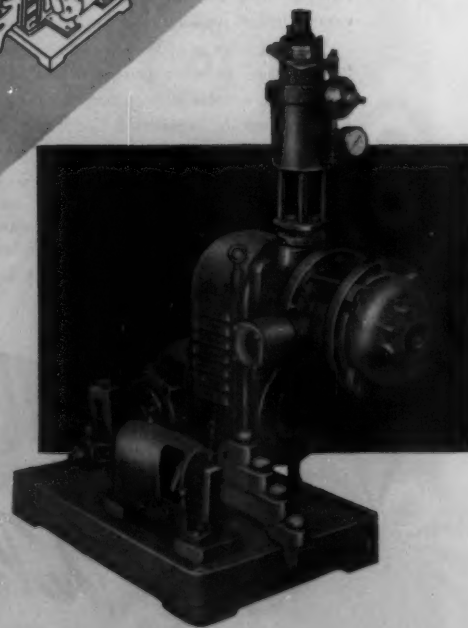
★ Standard motor-driven controlled volume pump on glue feed. In other process applications, this pump is used to meter such chemicals as dyes, sizes, wet strength resins, defoamers, and slimicides.

**new**



Milton Roy controlled volume pumps—new solution to low-capacity flow control problems in water treatment. Other low-capacity flow control applications in stock preparation, pulp bleaching, and machine processes.

● Motor-driven controlled volume pump, with air-controlled variable drive, used as final control element in accurate regulation of white water pH.



# flow-control approach

*provides accurate metering of paper makers and water-treating chemicals*

## **Controlled volume pumps are flow control instruments**

**A**CCURATE metering of paper makers and water-treating chemicals is a *must* for efficient and economical mill operation. Milton Roy controlled volume pumps provide paper makers with instrument precision in metering dye, size, glue, alum and other chemicals in stock preparation, bleaching, conversion and water-treating processes. Precision flow control improves product quality, prolongs life of boilers and processing equipment, conserves chemicals, and prevents loss of useable fibers to waste.

*Here's how*—Controlled volume pumps are really flow-control instruments . . . par-

ticularly valuable for controlling low-capacity flows. Reciprocating, positive displacement type pumps, they precisely measure and pump process chemicals within 1% accuracy! Pumps are available in capacities up to 1350 gallons per hour . . . pressures up to 50,000 pounds per square inch . . . with manual or automatic speed and stroke adjustment.

A few typical water treating applications are shown here. Other process applications are described in the literature listed below.\* How can Milton Roy Company's experience in handling low-capacity flow control problems benefit you? Milton Roy Company, *Manufacturing Engineers*, 1300 East Mermaid Lane, Philadelphia 18, Pa.

### **\*Write for these data sheets**

- F-54-1 Improving Wet Strength of Paper
- F-55-1 Efficient Metering of Paper Makers Chemicals in Stock Preparation
- F-55-2 Automatic Size Preparation Systems
- F-55-3 Controlled Volume Pumps in Machine and Conversion Processes
- F-55-4 Solving Water-Treating Problems in Paper Mills

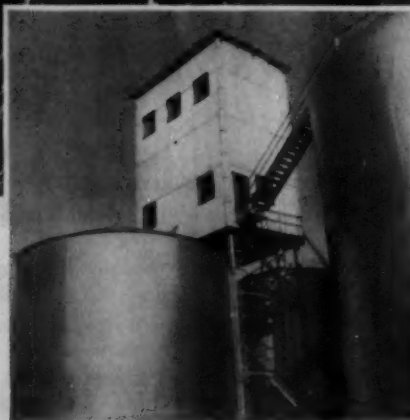


*Engineering representatives  
in the United States, Canada,  
Mexico, Europe, Asia,  
South America, and Africa.*

## Another **AIRVEYOR** in the pulp & paper industry



### Ketchikan Pulp Company joins a long list of users



Conveying duct from car to Airveyor filter in penthouse; delivers to and reclaims from storage bins.

International Paper  
Fibreboard Products  
St. Regis Paper  
Buckeye Cellulose  
Hudson Pulp & Paper  
Rayonier, Inc.  
Macon Kraft  
Gaylord Container  
Brown Paper Mill  
Eastern Corp.  
Fraser Paper  
Oxford Paper  
W. Virginia Pulp & Paper  
Tilston & Hollingsworth  
Fitchburg Paper  
Eaton's Paper  
Blandin Paper  
Millsboro & Ontario Paper  
Brown Co.  
Finch-Pruyn  
Newton Falls Paper  
Nigel-Carlson  
Chillicothe Paper  
Mead Corporation  
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Crown-Zellerbach  
St. Helens Pulp & Paper  
Sext Paper  
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Barr Paper  
Glaffetter Co.  
Bowaters-Southern  
East Texas Pulp & Paper  
Champion Paper & Fibre  
Camp Mill Co.  
Ginseng Co. of Va.  
Puget Sound Pulp & Timber  
Weyerhaeuser Timber  
Consolidated W. P. & Paper  
Kimberly-Clark  
MacMillan & Bleedell  
Smith Paper Mills  
Dryden Paper  
KVP Company  
Marathon Paper  
Ontario Paper  
Brown Corp.  
Canada Paper  
Ketchikan Pulp

Again, another Airveyor system has been put into operation, this time in the first major industrial plant in Alaska—the Ketchikan Pulp Company's 50 million dollar plant at Ward Cove, producing 300 tons daily of the highest qualities of chemical cellulose for U. S. and world-wide markets.

The Airveyor system handles bulk magnesium oxide, conveying from cars to two storage bins; reclaims from either of these storage bins for transfer to a day bin. The system is so arranged that materials can be recirculated from one storage bin to another if desired. Conveying rate for any of the above operations, 10 tons an hour . . . rapid, clean, efficient conveying all the way—from cars to process.

The pulp and paper industry has learned by experience that the Airveyor is engineered and built for superior performance for its particular use. Why not have a Fuller engineer make a study of your conveying problems . . . such a study costs you nothing, obligates you in no way.

# Fuller

pioneers in harnessing AIR

**FULLER COMPANY, Catasauqua, Pa.**

GENERAL AMERICAN TRANSPORTATION CORPORATION SUBSIDIARY

Chicago • San Francisco • Los Angeles • Seattle • Birmingham

A-201  
1918

# BIG NEWS

for  
Producers  
of Pulp &  
Paper!



CHLORINE DIOXIDE EXTRA



## COST OF CHLORINE DIOXIDE BLEACHING INSTALLATIONS SUBSTANTIALY REDUCED

### Over 90% Efficiency Being Maintained in Regular Production

Users of the Solvay Chlorine Dioxide system report operating efficiencies of up to 94% and consistently above 90%. This is the highest operating efficiency known to the pulping industry. As a result of this high efficiency, costs are lower.

### 8 Plants Now Using Solvay Chlorine Dioxide System

Eight pulping plants in various sections of the country are now successfully operating Solvay Chlorine Dioxide installations. Over 3,750 tons of all known grades of chemical and dissolving wood pulps are now being bleached daily with the Solvay designed bleaching process.

### New, Simplified, Improved Solvay Design Sharply Cuts Initial Investment

Solvay reports that the announced reduction in the installation cost of their system for the production and use of Chlorine Dioxide for pulp bleaching is the direct result of research and the experience gained in the processing of well over one million tons of pulp in a group of plants during the past three years. They further state that this improved and simplified design is not only lower in cost, but is actually producing even better results.

Solvay's Chlorine Dioxide bleaching gives you a new high in quality—with color brightness from G. E. 88 to 94 regularly—without loss of strength. The process is successful on all grades of pulp including kraft, sulphite and neutral sulphite semi-chemical. Dissolving grades of pulp are also in regular production.

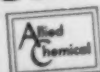
Both the Chlorine Dioxide manufacturing unit and the flow bleaching process are available on a non-exclusive contract and on a royalty-free basis.

**FURTHER INFORMATION**—If you would like additional data regarding the application of this process to a specific phase in your operation, write us in con-

fidence, giving full details. Solvay's Technical Service is available at no cost during design stages, start-up and training periods.

### SOLVAY PROCESS DIVISION

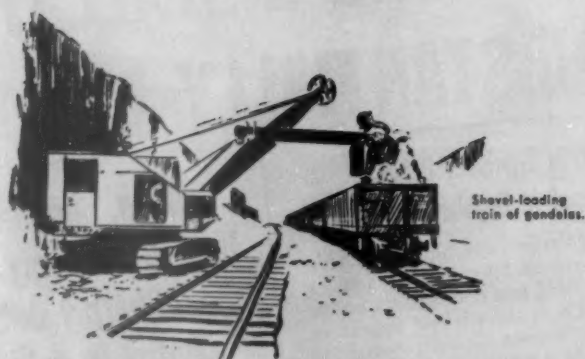
ALLIED CHEMICAL & DYE CORPORATION  
61 Broadway, New York 6, N. Y.



**BRANCH SALES OFFICES:**  
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston  
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse



Soda Ash • Snowflake® Crystals • Potassium Carbonate  
Calcium Chloride • Sodium Bicarbonate • Ammonium Bicarbonate  
Cleaning Compounds • Caustic Potash • Sodium Nitrite • Chlorine  
Caustic Soda • Ammonium Chloride • Chloroform • Methyl Chloride  
Methylene Chloride • Monochlorobenzene • Para-dichlorobenzene  
Ortho-dichlorobenzene • Carbon Tetrachloride



# Crude Sulphur

**for Industrial Use**

*from  
the  
properties  
of*

**Texas Gulf Sulphur Co.**

75 East 45th Street • New York 17, N. Y.

*Producing Units*

- NEWGULF, TEXAS
- MOSS BLUFF, TEXAS
- SPINDLETOP, TEXAS
- WORLAND, WYOMING

**IN YOUR SAVEALL...  
profitable recovery,  
clearer effluents with  
NEW PROCESS GLUE**



**...make your Saveall really save —  
in stock, water, time, labor and money.**

Savings obtained through efficiency in your flotation-type Saveall are the kind that pay off fast, and pay off *big* because they cost you so little to realize . . . less than a cent per thousand gallons of treated water.

Swift's New Process Glue is a superior non-foaming flocculent. Used in your Saveall, its unique colloidal action can be quickly noticed in clearer effluents. Its unusual flocking ability helps promote highest recovery of fibers and fillers.

Try Swift's New Process Glue in your Saveall . . . or see how it can be used for high retention of valuable clay and titanium. An informative bulletin outlining formulas, equipment and instructions for these and other uses is available to you without obligation.

Write for details and remember . . .

**ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS**

**DON'T OVERLOOK THESE  
OTHER IMPORTANT USES FOR  
NEW PROCESS GLUE**

- For creping of facial and toilet tissues and paper napkins.
- For high retention of clay and titanium.
- For machine coating.
- For paper that requires high Pick test.



**USE THIS COUPON FOR FURTHER INFORMATION**

Swift & Company  
Adhesive Products Department  
Chicago 9, Illinois

Please send your latest bulletin on Swift's New Process Glue.

Name of Company \_\_\_\_\_

Address \_\_\_\_\_

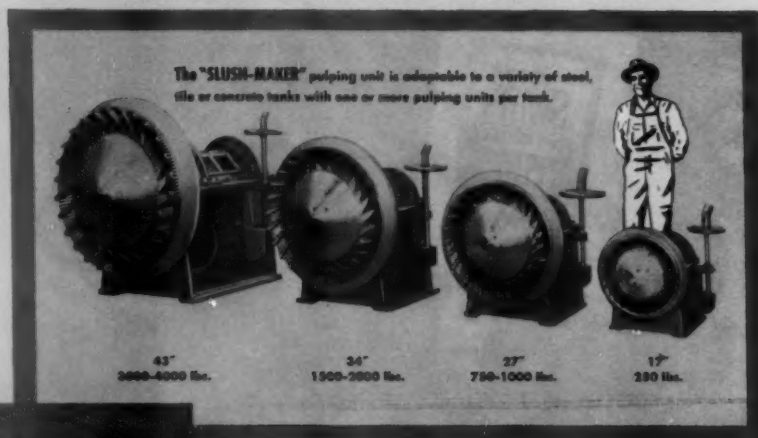
City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Your Name and Position \_\_\_\_\_

# **MORDEN** **SLUSH MAKER** Patented

## *For Pulping*

The Morden "Slush-Maker" can be used for either continuous or batch operation. Whichever method is used, there is a rapid and complete defibering.



These thumbnail sketches show some of the many tanks that can be designed to suit specific mill requirements.



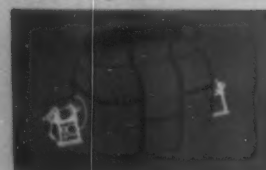
Dry-End Continuous Broke Pulper with Single Rotor



Low-Headroom—Side-Discharge Tank



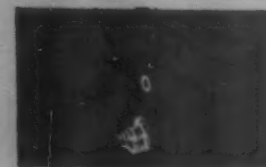
Special Single-Wall Cylindrical Tank



Standard Double-Rotor Tank for Larger Capacity



Special Cylindrical-Top Steel Tank



Dry-End Continuous Broke Paper Pulper with Double Rotor



Standard Tank with Special Charging Port

## *Advantages*

- **Full Bales or Slabs** can be charged by hand, lift truck or conveyor.
- **Dry-End Broke** can be handled continuously, directly under the paper machine.
- **Wet-Strength Papers** are readily reclaimed with the "Slush-Maker".
- **Rapid Pulping Action** permits greater production per day.
- **Operation** can be batch or continuous.
- **Vigorous Circulation** thoroughly mixes the colors and chemicals in less than a minute.
- **Completely Cleared Stock** reduces amount of beating and jordaning treatment required after pulping.
- **Tramp Materials** will not damage or bind the pulping unit.
- **Side-Mounted Pulping Unit** permits low-headroom applications, simple drives.

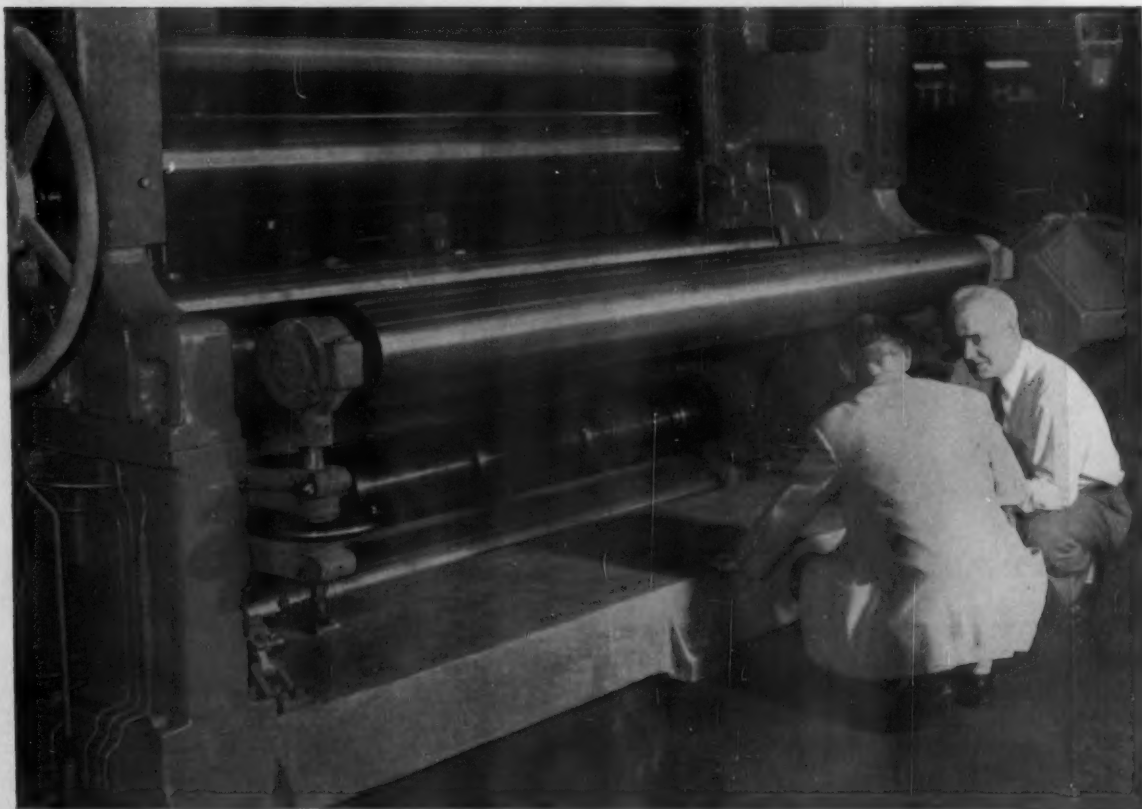


Northeastern States Representatives:  
**ORTON CORPORATION**, Fitchburg, Massachusetts

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3420 S. W.  
 MACADAM

PORTLAND,  
 OREGON



## Why Langston Slitters & Winders hold steady with a 3-ton roll whirling at full speed



**V-Belt Drives to the Rider Roll and Winding Drums.**  
Far more efficient than flat belts for a given cross-section size. Belts need no lubrication, give smooth drive, run quietly.

The massive bedplate and side frames on this Langston Model DA are important reasons why Langston Slitters & Winders work so well and last so long. Every Langston machine has a bedplate and side frames which, like this one, are more than husky enough to hold the machine steady under full load.

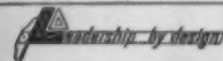
This extra sturdiness makes Langston machines easier to align, and insures that they will remain steady through a long life of hard use. With the weights these machines carry, it doesn't pay to risk unsteadiness—even at *moderate* speeds. If you plan to operate your winders at *high* speeds, you need all the sturdiness Langston construction gives you.

Clean-cutting Langston Slitters & Winders use shear-cut slitters throughout the line—standard equipment without special order or extra cost. V-belt drives to the rider roll and between winding drums with variable pitch sheave permit easy adjustment of speed to suit grade of paper, or roll density required.

Langston Slitters & Winders are available in four standard models, in sizes from 40 to 196 inches and speeds to meet your specifications. These machines are now being produced at an accelerated rate, but the demand is exceptional. Prevent disappointment by planning ahead and placing your order early. For full information, write Samuel M. Langston Co., Camden 4, N.J.



# LANGSTON





## New Masoneilan Moisture Boosts Paper Production

A manufacturer of board says, "Our production is up 7% a day, since installing a Masoneilan Moisture Control System." Another mill making dissolving pulp reports, "A Masoneilan Moisture Control System has helped us increase our tonnage by 10% ... and cut rejects due to incorrect moisture from 10% to 1%."

And that's not all! Along with many other paper manufacturers of all kinds, these mills are making a better, more uniform paper at lower cost with the versatile new

Masoneilan Moisture Control System. Here's how and why:

**A Masoneilan Moisture Control System** maintains an average moisture content across the sheet. Does not rely on "spot" measurements.

**It controls moisture content** at each of several points on the machine — from as high as 50% to as low as 3%.

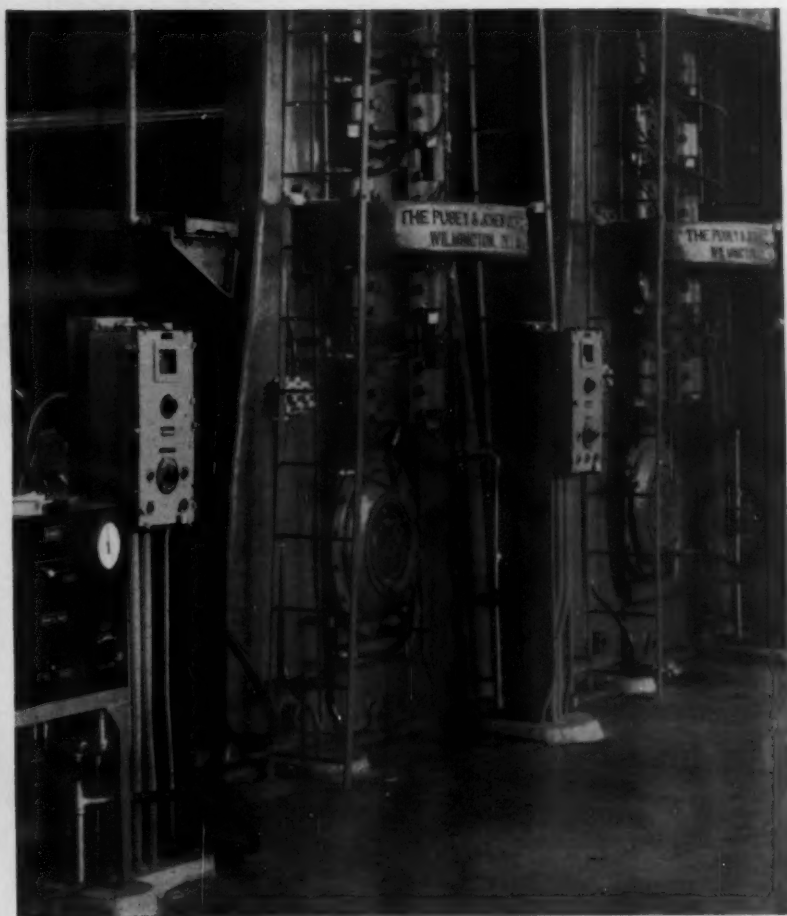
**Sensitive yet stable**, it holds moisture content accurate within  $\frac{1}{4}$  of 1%.

**Can be used for any speed ma-**

**chine** — any width machine. Is suitable for *all* grades or weights of paper.

**Provides individual pneumatic break control** at each control station. Cuts downtime due to dry breaks ... speeds recovery since it automatically handles steam to machine under all conditions.

**Eliminates human errors** ... makes for more uniform sizing and coating. Pays for itself in a very short time — in some cases in less than a week.



# Control System as much as 7%

Points up machine troubles such as improper drainage, variations in sheet furnish, changes in press operation, freeness, consistency, felts or air removal.

You should know more about this versatile Moisture Control System ... and what it can do for your mill. Complete information will be furnished on request.



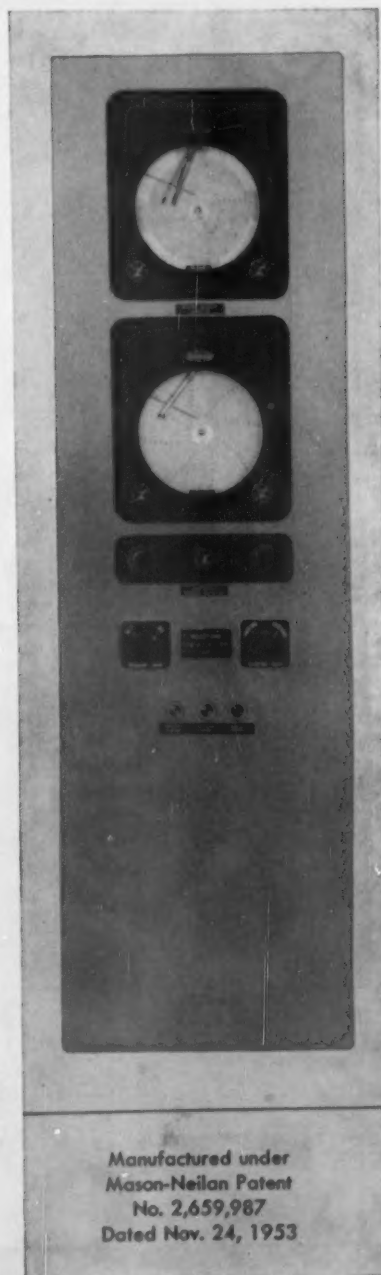
## MASON-NEILAN REGULATOR CO.

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Sales Offices or Distributors in the Following Cities: New York • Syracuse • Chicago • St. Louis • Tulsa • Philadelphia • Houston • Pittsburgh • Atlanta • Cleveland • Cincinnati • Detroit • San Francisco • Boise • Louisville • Salt Lake City • El Paso • Albuquerque • Odessa • Charlotte • Los Angeles • Corpus Christi • Denver • Appleton • Birmingham • New Orleans • Dallas • Seattle • Mason-Neilan Regulator Co., Ltd., Montreal and Toronto

### CONTROLS MOISTURE CONTENT AT...

Breaker Roll  
Single or Multiple  
Dryer Sections  
Size Tub  
Coating Press  
Reel

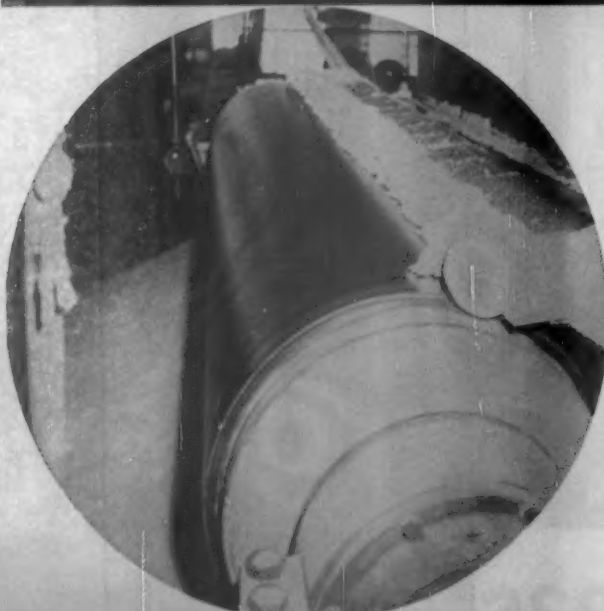


Manufactured under  
Mason-Neilan Patent  
No. 2,659,987  
Dated Nov. 24, 1953



**RUBBER COVERED**  
**"Self-Doctoring Topress" Rolls**  
*by*  
**GRIFFITH of Portland**

***Helps Port Angeles Increase Newsprint Production***



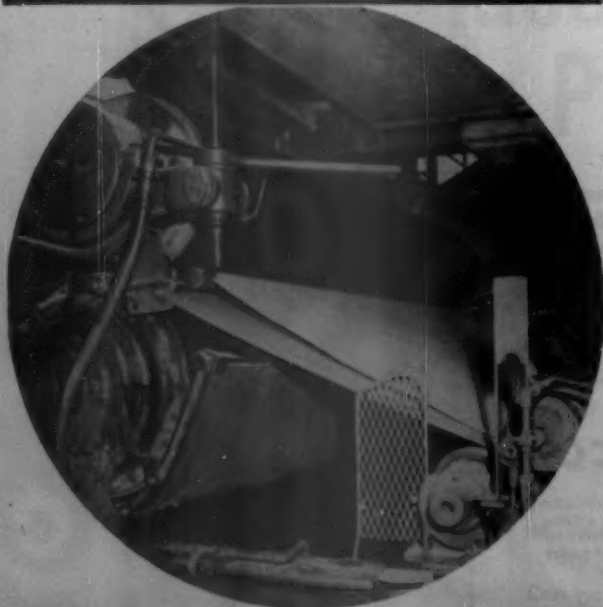
● **2% BETTER WATER REMOVAL  
OUT OF FIRST PRESS**

● **400% LONGER FELT LIFE**

Crown Zellerbach's No. 2 News Machine at Port Angeles, Washington, is equipped with a Beloit Pick-Up Transfer. In over 100 hours of continuous operation (since last start-up) no breaks occurred at this press. Machine speed is in excess of 1,700 feet per minute.

The top roll is resilient GRIFFITH S.D.T. Three other Self-Doctoring Topress Rolls are running in this three-machine mill. (All were purchased separately from GRIFFITH at Portland.)

GRIFFITH S. D. T. Rolls are also running on Kraft and Sulphite machines in many positions from Lumpcrusher to Sizing Presses.



Bottom Suction Rolls are rubber covered and drilled by GRIFFITH at Portland.

***Write or Telephone for an Estimate on Your Job***

**Griffith**  
**RUBBER MILLS**

2439 N. W. 22nd AVENUE  
PHONE: BEACON 7126  
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***Rubber Roll Specialists Since 1911***

# WOOD PULP PAPER



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in 60 cities in the United States, Europe,  
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295 MADISON AVENUE, NEW YORK 17, N. Y.



## Heavy fluids can't hinder working parts in these CRANE VALVES

**THIS CASE HISTORY** tells how the United States Playing Card Co., Cincinnati, solved—with Crane Diaphragm Valves—a costly problem of piping heavy enamels for paper coating.

The trouble was in the plug cocks and conventional gate valves formerly used in the enamel lines. During normal shutdowns the heavy liquid would build up on seating surfaces, in stem threads and working parts. The cocks and gates would "freeze up" . . . were hard to operate . . . couldn't be shut tight. The condition hampered production . . . made floors messy and dangerous . . . pushed maintenance costs sky-high.

Replacing with Crane Packless Diaphragm Valves stopped the trouble completely. Their sealed-to-fluid bonnet and pliable neoprene disc insert did the trick. After more than 4 years, all 48 Crane valves installed—with no maintenance whatsoever—are still seating tight . . . still operating freely and smoothly.

### CRANE PACKLESS DIAPHRAGM VALVES

Working parts are safely out of contact with line fluid. The diaphragm seals the bonnet—that's all it does, giving it longer life. The independent disc with pliable insert seats tightly on foreign particles or seat deposits . . . and controls fluid, even should diaphragm fail. See your Crane Catalog or Crane Representative for wide selection of body, bonnet, and trim materials in these valves for countless uses.



# CRANE CO.

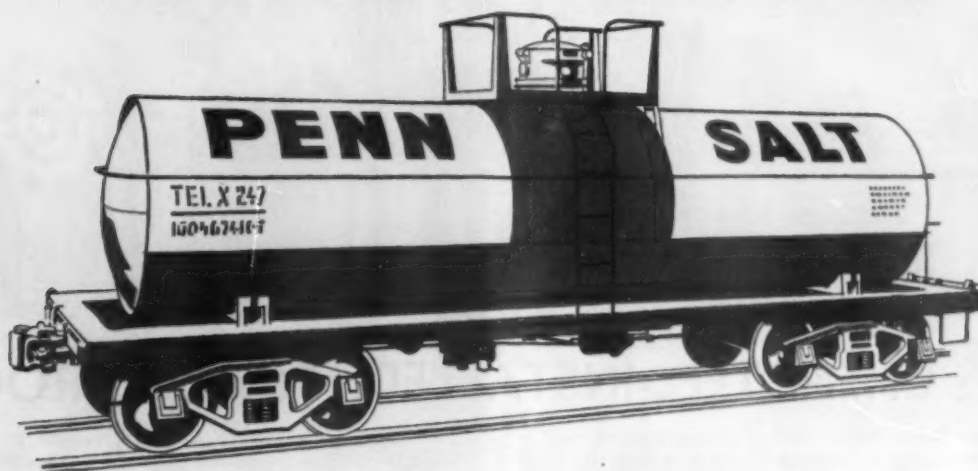
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**CRANE'S FIRST CENTURY . . . 1835-1955**

# NOW the BIG 4

## Pennsalt Basic Chemicals for Refined Pulp



**1 Chlorine**

**2 Caustic Soda**

**3 Sodium Chlorate**

**4 ANHYDROUS AMMONIA**

**L**ONG a supplier of Chlorine, Caustic Soda and Sodium Chlorate to the pulp and paper industry, PENNSALT now offers ANHYDROUS AMMONIA.

Because of the current attention and interest in the ammonia-base pulping process, PENNSALT is constructing facilities at its Portland, Oregon plant to produce anhydrous ammonia. This ammonia process, although not a new development for the manufacturing of sulphite pulp, has many advantages: ease of waste disposal, increased production through reduction

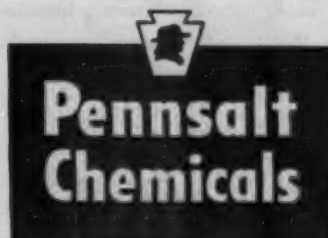
of cooking time and greater utilization of all woods. These advantages tend to reduce costs.

PENNSALT sodium chlorate produces chlorine dioxide which helps bleach wood pulps whiter and brighter with less deterioration of strength.

In addition to supplying chemicals of uniform quality, PENNSALT offers the assistance of its Technical Service Department.

Strategically located plants at Tacoma and Portland offer fast delivery and service.

Please write or telephone for detailed information on PENNSALT'S Big 4.



### OFFICES AND TELEPHONES

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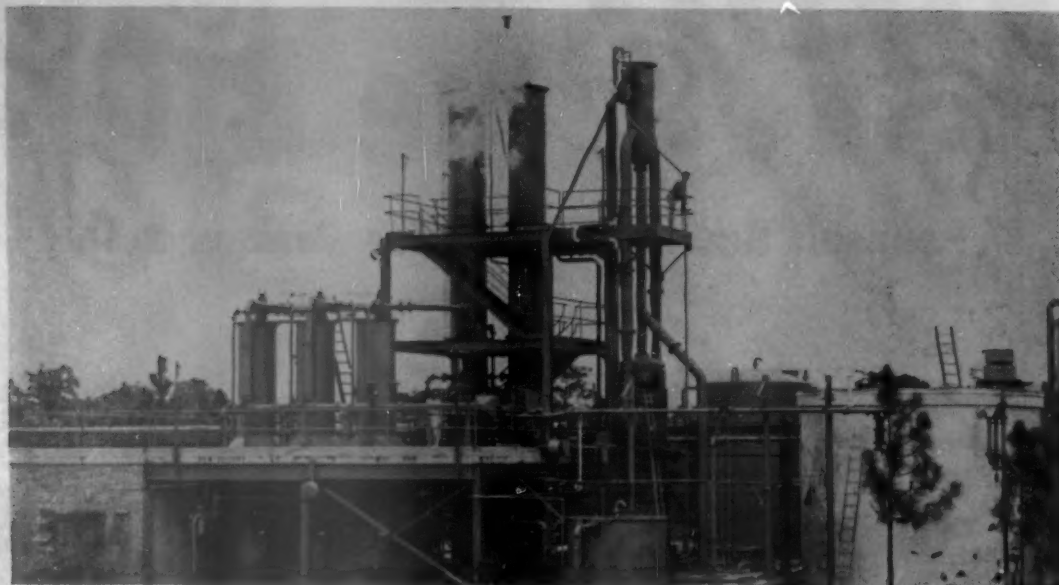
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### PENNSYLVANIA SALT MANUFACTURING COMPANY OF WASHINGTON

Tacoma 1, Washington

## IN CHLORINE DIOXIDE BLEACHING, TOO . . .



### If it's CHEMSTEEL-INSTALLED, IT'S ACID PROOF!

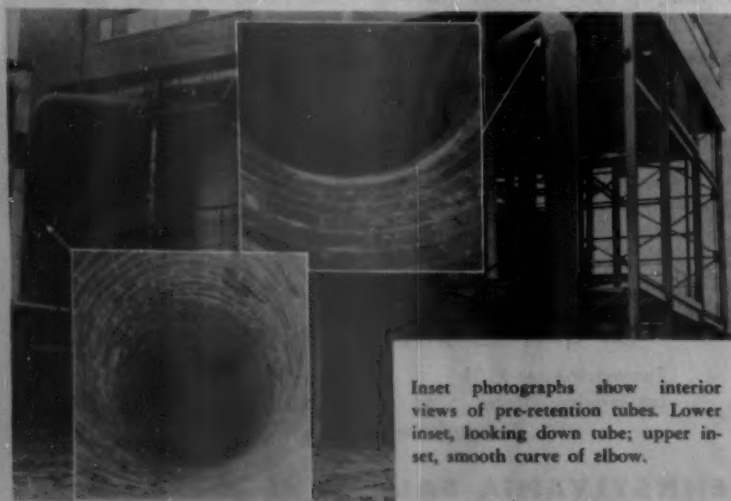
Chemsteel, through long experience serving corrosion needs of steel, chemical, textile and food industries, is especially geared to protect your  $\text{ClO}_2$  bleach equipment. Typical of its work are the acid-brick installations at Camp Manufacturing Company, Franklin, Virginia.

The three Reactors of the  $\text{ClO}_2$  Plant, each 17'2" x 3'4" I.D., and the two Absorbers, 25' x 3'4" I.D., were lined with 4½-inch acid brick over membrane. Distributor plates, 2-piece supporting plates, and ceramic lined nozzles were also installed.

Chemsteel used 2½-inch acid brick over membrane to protect

the  $\text{ClO}_2$  Receiver Tank, 8' x 8' I.D., and the 7' x 8' I.D. Spent Liquor Tank. Acid-proof tile over membrane was used to line the  $\text{ClO}_2$  Storage Tank, 25' x 18' I.D. A special flat concrete top was designed and installed by Chemsteel on the latter tank. This top proved more economical than the "dome" design usually found on such Solvay Process units.

Pre-retention tubes at the Bleach Plant were a special problem. Under a strong, continuous attack from the  $\text{ClO}_2$  solution in the pulp, the acid brick had to provide a smooth acid-tight curve within the elbows for efficient pulp flow. The photograph shows how successfully Chemsteel handled the job.



Inset photographs show interior views of pre-retention tubes. Lower inset, looking down tube; upper inset, smooth curve of elbow.

#### WRITE • WIRE • PHONE

When you are faced with a difficult corrosive problem in your bleach equipment, digestors, or any other paper mill units, call on Chemsteel. Let the experience and know-how of this field-proved organization save you money through correct installation. We'll gladly discuss your problems without obligation.



CHEMSTEEL CONSTRUCTION CO., INC., Chemsteel Bldg., Pittsburgh 32, Pa., Phone: MUseum 1-7500



**MEAD PULP SALES, INC.** • Distributors of Wood Pulp

BLEACHED AND UNBLEACHED CHEMICAL AND MECHANICAL WOOD PULP

118 West First Street, Dayton 2 • 230 Park Avenue, New York 17 • 20 North Wacker Drive, Chicago 6



The citizens of Escanaba soon discovered what had happened to their missing manhole cover. They found Paul Bunyan using it as a lid to keep his pipe bowl embers from starting forest fires.

This is the eighty-first incident from the fabulous life of Paul Bunyan. Reproductions are available on request.

## From one source . . . any instrumentation you need

When it comes to measurement and control, every industrial process is different. Each demands its own combination of accuracy, economy, instrument ranges, and all the numerous other characteristics that are peculiar to the individual application.

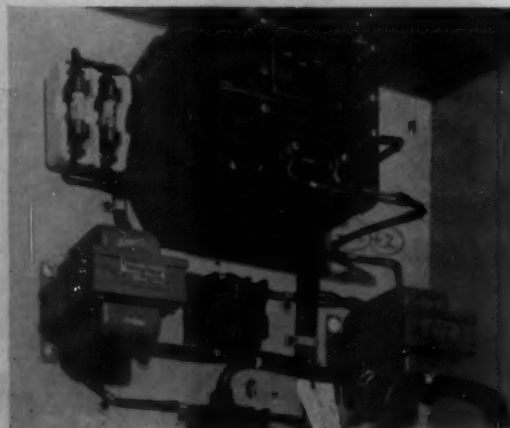
No single instrument and its accessories could possibly fit every process. So Honeywell makes a broad variety of measuring and controlling equipment that spreads across a tremendous range of applications.

The advantages are two-fold. First, you can get all the instrumentation your process requires from a single source, so there is undivided responsibility for the complete installation. And second, you are assured that the equipment selected for your process is recommended without bias . . . neither over-sells nor under-equips . . . needs no stretching, squeezing or compromising to fit it to its assignment.

This versatile family includes *ElectroniK* indicators, recorders and controllers in circular and strip chart models, applicable to temperature, pressure, pH, power and dozens of other variables; square root flow meters for control applications; evenly graduated flow meters for cost accounting; thermometers, pressure gauges and liquid level meters; *Pyr-O-Vane* millivoltmeter controllers. Especially useful for graphic panels are the *Tel-O-Set* miniature indicators, recorders and controllers. Electric and pneumatic control systems range from the simplest to the most complex, including automatic program controls and complete systems developed for particular processes.

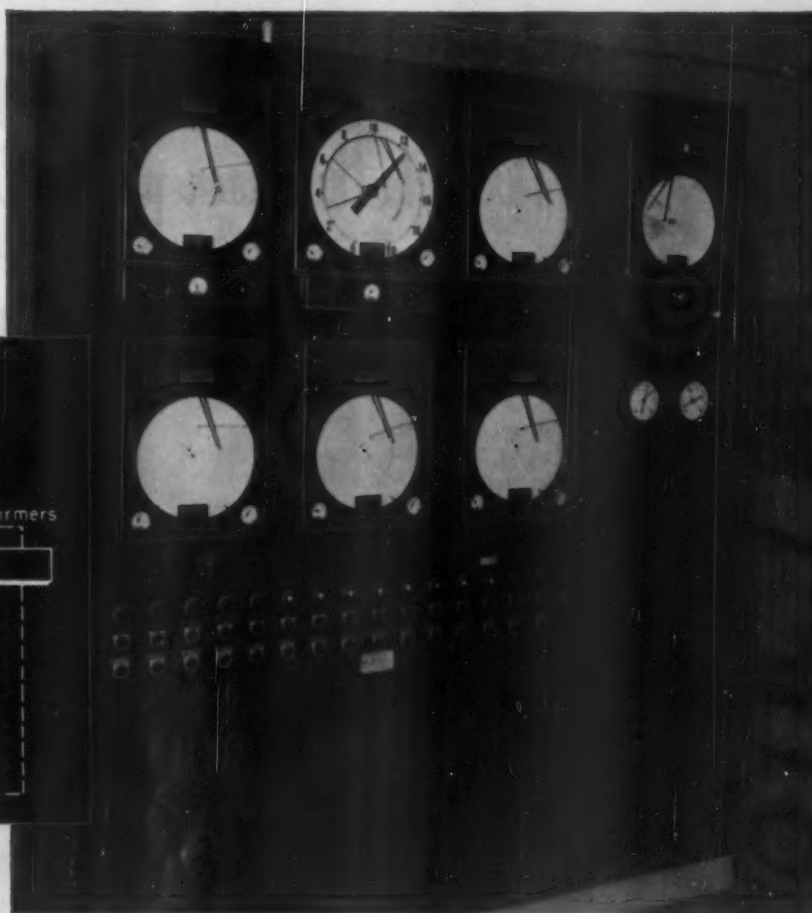
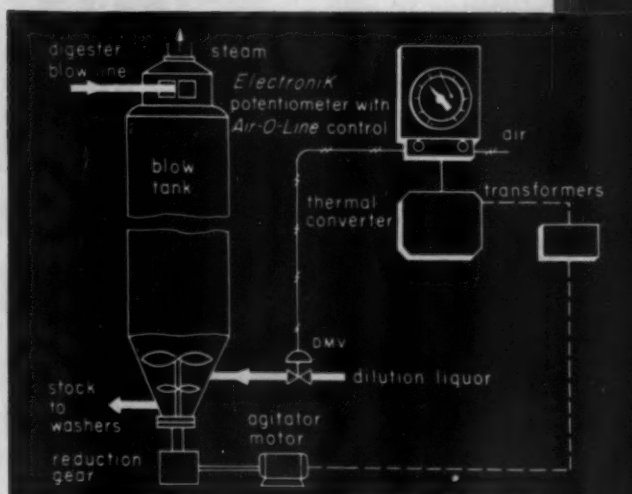
Working with these instruments is a full choice of primary elements . . . thermocouples, *Radiamatic* radiation elements, pressure-type and electrical resistance thermal systems; flow meter bodies, pH cells and many others. For final control elements, you can choose from a wide range of electric motorized and diaphragm operated valves. To complete the picture, there are more than 7000 non-indicating devices for controlling temperature, pressure, vacuum, liquid level and humidity . . . an unmatched variety of instrumentation made by the world's largest manufacturer of control equipment.

## Automatic way to control



Agitator motor load is detected by thermal converters, connected through transformers to the motor input circuit. Similar instrumentation is also being applied to consistency measurement in high density stock storage tanks and bleach towers.

Complete Brown instrumentation on this blow tank control panel includes (in upper row) *ElectroniK* Stock Consistency Controller. Diagram shows basic elements of the consistency control system.



## consistency of paper stock

BY APPLYING *ElectroniK* instrumentation to automatic measurement and control of stock consistency, paper makers are adding an important link in the chain of modern process instrumentation. When used as part of the blow tank control, this equipment continuously measures and records the consistency of the stock in the tank. And by regulating the flow of black liquor for dilution, it automatically maintains consistency at optimum values.

The instrument measures stock consistency in terms of the electrical power required to drive the agitator motor. When consistency rises, the motor draws more power . . . and vice versa. By using a thermal converter in conjunction with suitable current and voltage transformers, motor power input is changed to a d-c millivoltage signal

that the *ElectroniK* instrument can readily measure.

The *ElectroniK* instrument responds quickly and accurately to changes in consistency. By controlling automatically, it releases operators for other responsibilities . . . helps to eliminate fluctuations in stock flow to washers . . . protects production against failures of agitator motors, or washer pumps.

*ElectroniK* control of stock consistency is designed as an integral part of Honeywell control for modern paper processing. Your nearby Honeywell sales engineer will be glad to discuss your specific application . . . and he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO.,  
Industrial Division, Wayne and Windrim Avenues,  
Philadelphia 44, Pa.

● REFERENCE DATA: Write for Data Sheet No. 29.8-4, "Consistency Control for Paper Mills."



MINNEAPOLIS  
**Honeywell**  
BROWN INSTRUMENTS

*First in Controls*

## Through this door pass all knives for **BOLTON FILLINGS**

**ALL BOLTON** Jordan Plug and Shell knives go into our specially designed Circulating Oil Quench for Hardening and Tempering — then into this Precision Controlled, Recirculating Atmosphere, Gas Furnace.

**HEAT TREATING** at the Bolton plant is an exact science. Raw materials are carefully analyzed and controlled. Timing and critical temperatures are calculated for maximum, dependable knife hardness. Strategically placed thermocouples assure uniform heat throughout the furnace. Electrically controlled gauges


and a red line continuous indicating graph assure temperature tolerances within 5 degrees.

**QUALITY CONTROL** of this kind<sup>a</sup> is important to users of Bolton plug and shell fillings for:

- The economy of longer, trouble-free wear.
- Uniform hardness the entire knife length as well as throughout the plug and shell knives that make up a complete Jordan filling.
- Identical knife properties on each re-order.

<sup>a</sup>BOLTON is the only Fillings manufacturer with in-plant heat treating facilities.

**For Fillings of any metal, in any design, for any machine  
— buy BOLTON**



Circulating Oil Quench for hardening and tempering.



Control Panel in rear of Heat Treating Furnace, right

**John W. BOLTON & Sons, Inc.**  
Lawrence, Massachusetts, U.S.A.

## In Human Engineering, What is Best?

These procedures and techniques were found the most successful in three Mead "white paper" mills.

• What, exactly, are the most worthwhile practical things that a mill management can do to improve its human engineering techniques? In other words, what can be done, specifically, to give employees a greater sense of belonging, and develop more cooperation, enthusiasm, loyalty and productivity among employees?

That was the question that George H. Pringle, Mead vice president and the newest ex-president of TAPPI, posed to the managements of the three white paper mills over which he has responsibility—Chillicothe, O., Escanaba, Mich., and Kingsport, Tenn.

These mills, managed respectively by O. B. Mason, G. S. Douglas and E. H. Niederauer, didn't waste time coming up with specific answers. They knew what had worked in their mills. These answers, woven into some personal observations of Mr. Pringle's, based on over 28 years experience in the industry, were the basis of a talk he made recently to the Ohio TAPPI Section.

The major recommendations of the three Mead mills and Mr. Pringle were these:

To create a friendly and cooperative atmosphere between young technical men and oldtime papermakers;

Give supervisors advance knowledge of plant changes and get their ideas and advice; also keep hourly workers informed in advance as a job progresses;

Enlarge rather than narrow a worker's task to stimulate interest, reduce boredom and fatigue and increase productivity;

Hold monthly or twice-a-month policy meetings of department heads, presided over by the mill manager, and keep minutes; follow this with department meetings for supervisors and foremen, where references are made to the minutes, and so on down the line, until the entire organization is informed;

Keep avenues open for the thinking of lowest employees to reach to top management;

Every day before 10 a.m., post a single page publication on notice boards which gives credit for outstanding work, identifies expected



GEORGE PRINGLE, Vice President in charge of White Paper Operations, The Mead Corp., told what his company found were good human engineering practices. He credited mill managements in his white paper organizations and with helping gather the material. Here he is with the three Managers of the White Paper Mills (l to r) Mr. PRINGLE; O. B. MASON, Mgr. of the Chillicothe, O., Division; E. H. NIEDERAUER, Mgr. at Kingsport, Tenn., and G. S. DOUGLAS, who recently became Mgr. at Escanaba, Mich.

plant visitors, carries "ads" for personal items employees want to sell, etc.;

Get the knowledge and ideas of oldtimers down in writing before they are gone, for the benefit of those who follow.

To Mr. Pringle, 26 years an engineer and chief engineer for all Mead mills before he was placed in charge of the white paper mills, the practical aspects of human engineering are what mean most. This was evident as he said:

"Any man who has served 25 or 30 years as a machinetender, backtender or even third hand, has some constructive suggestions to offer. In planning a new machine or machine rebuild, we should obtain these ideas, and in discussions, engineers and technical men can draw them out."

In regard to providing advance information to "job security-conscious" employees, he said long before Mead had built a new pulp mill which eliminated 17 jobs, these employees had been found new jobs, on a seniority basis, elsewhere in the company.

To get a permanent record of the "know-how of papermaking" of oldtimers, Mr. Pringle recommended that each individual mill do this by selecting "a good practical" tour foreman or machinetender with high school education to write down the knowledge of the oldtimers. Among the things they should get down on paper are their recommendations on adjustments

necessary for each grade of paper to meet quality specifications.

When there is disagreement among the oldtimers, he said, run trials to determine the best procedure. This was done by Mead recently, to decide between three types of felt cleaners.

Information that should be passed down the line to employees, he said, concerns company earnings, order situations, equipment or process changes, retirement plans, etc.

He told how once Mead took a crew into its confidence when a customer, dissatisfied with its previous supplier, asked Mead to make an entirely new grade of paper. The result was an outstanding product. "I don't believe it would have been, if we hadn't taken the entire group into our confidence," said Mr. Pringle.

In urging young technical men to be humble and show admiration for the oldtime papermakers, Mr. Pringle cited the case history of a Mead general superintendent. He was a college engineering graduate since World War II, and had worked in every operating department of the mill. Before his promotion, he won the confidence and good will of two oldtimers in their 60's. Now these oldtimers are two chief supervisors under the young engineer, and—Mr. Pringle says—"their main desire is to teach this young man everything they know about papermaking and handling men before they retire. As a result, he is doing an outstanding job for us."

**EDITORS NOTE—**

Worldwide commerce in woodpulp is setting new patterns as well as new records. Woodpulp has become a billion dollar commodity in world trade.

As a service to hundreds of subscribers to PULP & PAPER in other countries, we are now publishing our world pulp news in both Spanish and English on these pages.

**NORTH AMERICA BACK IN ARGENTINE MARKET—**United States and Canadian market pulp producers got back into the Argentine market in the second half of 1954. Argentina imported 73,000 tons from North America, almost as much as its 79,000 tons from Sweden and Finland. But this was a major change, because not since 1940-41 had the North American mills produced any important volumes of pulp for Argentina. In fact, from 1950 on, the Scandinavian countries, mostly, Sweden, had a monopoly in the Argentine market.

Pulp consumption for Argentina in 1955 is estimated at about 220,000 metric tons, of which 31% will be supplied by Argentine mills. Domestic pulp production is expected to increase from 55,500 tons in 1954 to 69,500 tons in 1955. But by 1957, the Second 5-Year Plan for Argentina calls for 203,000 tons, of which 153,000 would be chemical grades, including 18,000 alpha-cellulose. A new 50-tons-a-day sulfite mill is being built by Celulosa Argentina S.A. in Misiones, and other mills are projected but it will be several years before Argentina can attain self-sufficiency.

**VENEZUELAN FORM BAGASSE PAPER COMPANY**

—Venezuelan industrialists Eugenio Mendoza, Alberto Vollmer and Francisco Mendoza head a new firm named C. A. Venezolana de Pulpa y Papel, capitalized for 25 million bolivars (\$7,500,000), to build a 30,000-ton (annual) kraft mill using sugar cane bagasse to make paper for bag, wrapping and corrugating for boxes. Purchased woodpulp would be required, especially if plans are carried out to make higher quality papers. Sites favored are Lake Valencia or Lake Maracaibo.

**RECORD OUTPUTS—**Swedish woodpulp production of 3,800,000 tons in 1954, exceeding all records of the past, is estimated by Sverker Kastrop, sales manager of Swedish Cellulose Co. Total European pulp output for 1954 is estimated at 900,000 tons more than in 1953. United States woodpulp production in 1954 rose to a new record, 18,360,784 tons, 800,000 tons more than the 1953 record. A record 15,938,204 tons were chemical pulps, said U.S. Pulp Producers. Canada also set a new record, producing 9,500,000 tons, up 6% from 1953.



**DONALD FRASER**, who is Manager of new Woodpulp Sales Division of West Virginia Pulp & Paper Co. West Virginia, incidentally, owns small paperboard mill, Rigesa S.A., at Valinhals, Sao Paulo, Brazil.

**Sr. DONALD FRASER**, gerente de la división de ventas de la West Virginia Pulp & Paper Company, es propietario también de una fábrica de cartón en Valinhals, Sao Paulo, Brazil.

Hoy día en el comercio mundial de pulpa se están realizando grandes cambios, al mismo tiempo que dicho comercio aumenta notablemente. El valor de la pulpa como artículo de comercio mundial ya asciende a más de 1.000.000.000 dls.

Con el anhelo de mejor servir a nuestros muchos lectores, mensualmente publicamos nuestras noticias mundiales en español e inglés.

**VUELVE NORTEAMERICA AL MERCADO ARGENTINO**

—Productores de pulpa del Canadá y E. U. volvieron a penetrar el mercado argentino durante la segunda parte del año 1954. En la República Argentina se importaron 73.000 toneladas de pulpa Norteamericana, cantidad que se aproximó a las 79.000 toneladas que entraron de Suecia y Finlandia. He aquí un acontecimiento de importancia, pues desde 1940-41 no se habían enviado cantidades notables de Norteamérica a la República, más bien desde 1950 los productores escandinavos, en particular los suecos, habían monopolizado aquel mercado.

Según los presupuestos, la Argentina consumirá 220.000 toneladas métricas (1000 kilos) de pulpa en 1955, de que cantidad el 31% saldrá de las fábricas de la misma Argentina. Se espera que la producción argentina aumentará de 55.500 toneladas en 1954 a 69.500 en 1955. Para 1957, de acuerdo con el segundo Plan de Cinco Años se producirán 203.000 toneladas de las cuales 153.000 serán de grados químicos, inclusive 18.000 de alfa-celulósica. La Celulósica Argentina S.A. está construyendo en Misiones una planta nueva de 50 toneladas diarias de capacidad y se proyectan otras, a pesar de que pasarán varios años antes de que la República pueda suplir la demanda nacional.

**RECORDS DE PRODUCCION—**En Suecia se produjeron 3.800.000 toneladas de pulpa leñosa, que calcula Sr. Sverker Kastrop, gerente de ventas de la Swedish Cellulose Company, será la mayor producción que jamás se ha realizado en dicho país. El total de producción en Europa se calcula en 900.000 toneladas más que en 1953. En E.U.A., la producción de pulpa leñosa durante 1954 subió al record de 18.360.784 toneladas, o sean 800.000 toneladas más que el record de 1953. Declararon los U.S. Pulp Producers que 15.938.000 toneladas (otro record) fueron de pulpas químicas. El Canadá también logró un record en 9.500.000 toneladas, el 6% mayor que la producción del año 1953.

**EMPRESA VENEZOLANA DE PAPEL DE BAGAZO—**

Los Sres. Eugenio Mendoza, Alberto Vollmer y Francisco Mendoza encabezan la nueva Cia. Venezolana de Pulpa y Papel, con capital de 25.000.000 bolivares o sean 7.500.000 dls. para edificar una planta con capacidad de 30.000 toneladas anuales de kraft usándose bagazo de caña de azúcar y produciéndose papel para bolsas, para envolver y para cajas de empaque. Sería necesario comprar pulpa, especialmente si se determina fabricar papeles de mejor calidad. En cuanto al local de la fábrica, se habla de los lagos Valencia o Maracaibo.

**SE OPONEN 21 JEFES NORTEAMERICANOS A**

**CIERTAS INVERSIONES—**La Pulp, Paper & Paperboard Industry Council (Consejo de la Industria Pulpera y Papelera) un grupo de 21 gerentes de empresas particulares que sirven de consultores ante el Departamento de Comercio Exterior de los Estados Unidos.

Pulp Producers. Canada also set a new record, producing 9,500,000 tons, up 6½% from 1953.

**21 U.S. INDUSTRY LEADERS OBJECT TO UNECONOMIC INVESTMENTS ABROAD**—The U.S. Department of Commerce's advisory body, 21 U.S. pulp and paper industry leaders who serve on a Pulp, Paper and Paperboard Industry Council, raised strong objections to any use of U.S. government moneys to build mills abroad where investigation by American manufacturers has shown the projects to be uneconomic.

As regards the President's proposals for tariff reductions, they said tariff rates on paper and paperboard already have been reduced to a dangerous point in 20 years. They were assured by government spokesmen that United States interests would be safeguarded and that reciprocal concessions would be required in return for any U.S. tariff concessions.

Secretary of Commerce Weeks, Assistant Secretary of Agriculture Ervin Peterson, FOA Investment Development Chief Victor Albrant and half a dozen other government officials addressed the private industry leaders. The latter were all presidents or top executives of pulp and paper firms, virtually all of them heads of big companies but also including heads of a couple of smaller paper companies.

It was announced that the International Bank plans to establish a new International Finance Corp., empowered to make "risk" capital loans for foreign mills.

**BOWATERS WORKS 7-DAY WEEK**—In a drive to capture new world markets, Bowaters Pulp & Paper Mills of Corner Brook Newfoundland, has gone on a 7-day work week. Gerald Penney, mill manager, announced the increase, which will substantially increase production of the big mill. Besides newsprint, it makes sulfite pulp for market. It makes 55,000 tons of sulfite on 6-day week. Over \$40,000,000 has been invested in expansion of this mill in postwar years.

**PRICES GO UP ON BRITISH PAPERS**—Britain, an increasingly important market for imported woodpulp, has experienced a general increase in prices of many of its paper grades. Wood-free papers, not using imported pulps, were increased first. But now there have been increases of 3 pounds 10 shillings per ton for kraft papers and m. g. sulfite, and up to 6 pounds per ton for m. g. envelope. Scandinavian and home-manufactured newsprint also has been increased in price.

**SEMI-CHEMICAL PULPS FOR LOCAL MARKETS?**—John H. Rich, assistant mill manager, Riegel Paper Corp., told an industry meeting in Holyoke, Mass., that new semi-chemical bleached pulps, not yet on the market, present possibilities for use of hardwoods in New England. Glassine and book paper makers were especially interested. While the report did not expand on the subject of a market semi-chemical pulp, and Riegel itself makes a high quality semi-chemical pulp, there has not been much sale of this grade. Finland has shipped some sizable quantities. However, in local areas in various parts of the world, semi-chemical pulps made nearby, could find a place on the market, industry experts believe.

**DU PONT RAISES RAYON YARN PRICE**—Increases of 2 to 5 cents a pound on most heavy denier textile rayon filament yarns have been announced by Du Pont Co. Woodpulp is a basic material. Du Pont said rising costs were the reasons.

mento Federal de Comercio del gobierno Federal norteamericano ha lanzado fuertes protestas contra la inversión de fondos públicos para construir en el extranjero plantas que han sido declaradas no factibles por los fabricantes particulares.

Tratando de las propuestas del Sr. Presidente Eisenhower para reducir los derechos de entrada sobre papel y cartón, declararon los consejeros que dichos impuestos ya se encuentran en punto peligroso. Se declaró de parte del gobierno que se protegerán los intereses de la industria y que en caso de hacerse ajustes de los derechos, se exigirán concesiones correspondientes.

El Sr. Secretario de Comercio Sinclair Weeks, el ayudante Secretario de Agricultura Ervin Peterson, el jefe de inversiones de la Foreign Operations Administration (Dirección de Operaciones en el Extranjero) Sr. Victor Albrant, y varios otros funcionarios dirigieron discursos a los concurrentes, la mayor parte de los cuales son presidentes o gerentes de empresas grandes de pulpa y papel, con algunos también de firmas menores.

Se declaró que el Banco Internacional establecerá una nueva dependencia, International Finance Corp., para hacer préstamos "al riesgo" a fábricas extranjeras.

**SEMANA DE 7 DIAS EN BOWATERS**—La gran fábrica Bowaters Pulp & Paper Mills de Corner Brook, Terranova, se mantiene en operación siete días por semana para poder capturar un nuevo mercado mundial, según participa Sr. Gerald Penney, gerente. El aumento de horas de trabajo aumentará también la producción que consiste de papel para periódico y pulpa de sulfito para el mercado, fabricándose 55,000 toneladas de sulfito por semana de seis días. Desde el fin de la guerra se han invertido 40,000,000 dls. para aumentar las facilidades.

**SUBEN LOS PRECIOS DE PAPELES BRITANICOS**—En la Gran Bretaña, importante compradora de pulpas del extranjero, se han visto aumentos de precio de muchos grados de papel. Papeles sin madera, que no contienen pulpas importadas, fueron los primeros que aumentaron. Ultimamente los papeles kraft y m. g. sulfite han aumentado 3 libras 10 chelines tonelada, y hasta 6 libras tonelada por m. g. para sobres. El papel para periódico, tanto el escandinavo como el del país, ha aumentado también.

**PULPAS "SEMI-CHEMICAL" PARA CONSUMO LOCAL**—En una junta de personajes de la industria en Holyoke, Massachusetts, declaró Sr. John H. Rich, ayudante al gerente de plantas de la Riegel Paper Corporation, que ciertas nuevas pulpas blanqueadas de grado "semi-chemical" muestran la posibilidad de utilizar maderas duras. Dichas pulpas todavía no están de venta pero hubo especial interés de parte de fabricantes de papel para libros y papel "glassine" o vidrioso. La relación del Sr. Rich no mencionó tal pulpa para el mercado, y hay que notar que la compañía Riegel actualmente fabrica pulpa "semi-química" de alta calidad, de la cual no se han logrado grandes ventas, más bien se han importado notables cantidades de Finlandia. En fin, dicen muchos expertos que en algunas localidades del mundo se podría encontrar demanda para pulpa semi-química fabricada no lejos del puto de uso.

**MAS CARO EL RAYON**—La compañía DuPont ha declarado aumentos de 2 a 5 centavos (moneda norteamericana) libra por la mayor parte de las hebras de rayón de grueso denier. El rayón se fabrica a base de la pulpa leñosa. Los aumentos, según declaraciones de DuPont, se hicieron causa al costo de producción.



**CAPT. SCHMON**  
—New Jersey-born CPPA Chairman was World War I "comrade-in-arms" of Col. R. R. McCormick, and heads Tribune's Canadian mills.

### Capt. Schmon is New Chairman of CPPA

Capt. Arthur A. Schmon (rhymes with "moan"), World War I "comrade-in-arms" of Col. Robert R. McCormick, publisher and editor of *The Chicago Tribune*, and head of *The Tribune's* Canadian paper mills, is the new chairman of the executive board of Canadian Pulp & Paper Association. Born in New Jersey, Capt. Schmon is a Princeton University alumni.

Col. McCormick and Capt. Schmon served together in the famous "Fighting First" division artillery of the American Expeditionary Force in France.

After the war Capt. Schmon continued as a business associate of Col. McCormick and first went to Canada as manager of the *Trib's* Shelter Bay mill in 1919. Now he is president and general manager of both Ontario Paper Co., Ltd., and Quebec North Shore Paper Co., the

Tribune subsidiaries, which make over 1,100 tons a day of newsprint.

Col. McCormick is treasurer of both Canadian companies.

Capt. Schmon has served at the Ontario operations since 1919, and as president since 1933. Later what were for years the fastest newsprint machines in world were installed in the newer Quebec North Shore mill and he has been president of this company since 1938. As CPPA chairman, he succeeds Paul E. Cooper, who resigned recently as president of Crown Z Canada Ltd. He also was at the Montreal convention. The chairman's election is a surprise announcement of the convention's last day.

P. M. Fox, St. Lawrence Corp. vice president, and E. M. Little, president of Anglo-Canadian—both former chairmen—were named new vice chairmen. Mike Foley, executive v.p. of Powell River, was named honorary vice chairman.

## Montreal Topic—Canada vs. South

### International Paper plan causes stir in Canadian meeting; Fowler pleads for industry talks on tariffs

● Rising costs in woods and mills, for railroads, taxes and wages, and the French-Canadian religious barriers that keep many machines idle one day a week—these problems were weighing heavily on the minds of industry leaders at annual convention of the Canadian Pulp & Paper Association in Montreal in late January.

Smack in the middle of this meeting came the bombshell announcement that International Paper, with capacity of over 2,800 tons a day of newsprint in Canada, was at long last going to desert the Dominion to go South for a new newsprint mill. This and Bowater's big plans in Tennessee for expansion whipped up the much-debated issue again—the South's costs vs. Canada's.

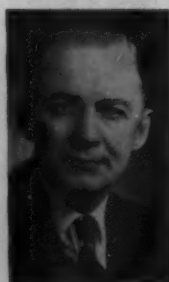
But even this subject didn't detract from tariffs and trade barriers. Talking with many CPPA leaders, it was evident what was on the Canadian management minds.

Since pulp and paper now constitutes a record 25% of Canadian total export business, the industry is highly sensitive on the subject of tariffs and trade barriers anywhere in the world.

Rising costs and tariffs were the dual themes emphasized by the association's spokesman, and permanent president, Robert M. Fowler, who said:

"There will have to be trade discussions between Canada and the U.S. to deal with this unbalance of trade (ad-

**R. M. FOWLER**  
—"Tariffs should not be left solely to governments . . . can't we find common ground with our friends?"



verse to Canada by \$600,000,000 in 1954). No one wants to see that balance struck at a low level. The only other way to do it, is to have a gradual expansion of Canadian exports to the U.S. It should be possible without damage to existing American industries.

"This is not a problem that can be left solely to governments," said Mr. Fowler. "I wish we could find some way for industries and industry organizations in the two countries to sit down together to determine the facts and lay the ghosts of past controversies. (Incidentally, the U.S. pulp and paper industry has an unfavorable trade balance of about \$600,000,000, too! That is in pulp and paper products imported into U.S. vs. U.S. exports of same.) Perhaps we might find some way to build up total trade in North American pulp and paper. I wonder if we could not reach out across the border and find some com-

mon ground with our friends in the American pulp and paper industry to see if there are ways to expand our trade with advantage to both."

**COULD CANADA STAND A TARIFF CUT?**—But could Canada stand a reduction of its tariffs, which are on paper grades of all kinds, including the only tariff existing in the world on newsprint? This was one reaction of an American listener, one of many Americans at the Canadian meetings, whose companies have heavy investments in Canada. His question was prompted by the Eisenhower Administration's pronouncement that tariff reductions are "a two-way street" and any American reductions must be compensated with like concessions to the U.S. U.S. paper tariffs already have been cut 65% since 1913.

However, another American, whose company makes coated book papers, said he saw no chance for any influx of Canadian book or quality papers in the U.S., unless the gates are opened by the international GATT organization. Mr. Fowler, incidentally, stressed the vital importance of GATT to Canada. Canada now makes 500 varieties of paper; has increased book and fine papers by 60%.

While he was able to report new Canadian records for newsprint and woodpulp production and exports in 1954, Mr. Fowler did say that the other paper and paperboard products

made in Canada were unable to hold an important but small export market, being down from peak levels in 1953.

On this point, another American listener, whose company owns many such operations in both Canada and the U.S., said the Canadian producers could not compete even in Britain and Commonwealth countries with American products. But Canadian producers are eager to share in the growing European demand for packaging papers.

Mr. Fowler forecast newsprint markets for a record 6 to 6.2 million tons from Canada in 1955, compared with 5,970,000 tons shipped in 1954. For woodpulp he predicted a continued strong demand, but noted that 1954 was not "entirely profitable" for unbleached grades. These prices are now increased.

**I. P. PLANS STIR MEETING**—Dramatically emphasizing the higher cost problems in Canada was the sensational announcement that International Paper Co. will build its next newsprint mill in the South.

The news hit the Canadian convention like a thunderbolt, and the great majority of the 1,300 delegates in Montreal were soon busy buzzing about it. Incidentally, the word spread, as it does at conventions, that the newsprint mill would be built at Natchez, Miss., where I.P. has its newest pulp mill in the South; or at Mobile, Ala.

The blow to Canada was doubly grievous as word also spread of elaborate plans of Bowater, a British company, to expand in Tennessee instead of seeking another site in Canada—possibly adding two more machines there.

**CANADA VS. THE SOUTH**—An American executive at Montreal, whose company operates in a big way in both the South and Canada, and therefore might be considered an impartial judge, summed it up this way:

"While Canadian common labor is cheaper, the skilled labor must now be paid a premium to work in remote Canadian mills and woods; river logging is becoming obsolete and the Canadian companies must stand the same costs as the U.S. for truck and tractor logging; and finally, pulpwood can be grown in 35 years in the South, where it takes 105 years to grow such a tree in Canada."

Mr. Fowler expressed the view that the overall cost position in Canada has reached "a point of balance, and what we do about it will determine whether the industry continues upward or turns downward."

He cited the work week reduced by 12% since 1951, while wages went



AT A MEETING in Canada (l to r) COL. R. R. McCORMICK, owner of *The Tribune*; His Excellency Monsignor N. A. LABRIE, and CAPT. SCHMON, whose ability the Colonel had marked many times in France in World War I, where they served together. This led him to offer Capt. Schmon the managership of a mill at lonely Shelter Bay, which supplied wood for *The Trib's* paper mill at Thorold. Capt. Schmon is now head of all *Tribune* papermaking operations. Bishop Labrie's diocese was created after *The Tribune* built Baie Comeau and that town, in the '30s, became his see.

up 25%, practically the same as rates in the U.S. and more than twice those in Scandinavia. He indicated the \$250,000,000 a year railroad freight bill was like a ball and chain on the Canadian industry (11% of the railroad income), and said something should be done about idle freight cars as well as rates, and to speed up loading and improve the cars. He mentioned high taxes on forest holdings as well as profits. While he deplored the 6-day operations week, especially required in the many French-Canadian Catholic communities (though he didn't mention where), Bowaters Newfoundland—far from those areas, announced a 7-day week in a drive to win world markets.

#### Other Awards at Montreal

At Montreal, another coveted Canadian award, the F. G. Robinson technical service award for 1955, went to D. Kenneth C. Logan, director of development, Northeastern Paper Products Ltd., Quebec City. With Dr. Harry F. Lewis of the Institute, he co-chairmanned the International Symposium on the Paper Machine, held at Appleton in Sept. 1954 (see *Pulp & Paper's* report, Nov. 1954 issue.)

A competition for new inventions, devices or gadgets was won by Harry Moore, a millwright at Ontario & Minnesota P & P, Kenora, Ont., for a device to remove a rotor from a motor. Second prize went to J. A. Farrier and A. H. Hopkins of the Spruce Falls newsprint mill for a machine attachment to cut the paper tail through calenders.

The 1955 safety awards went to Consolidated Paper Corp., Ltd., for large mills and Manitoba Pulp & Paper, for small mills.

#### Figures on Canadian Production Show Gains

Official reports on pulp and paper products made by CPPA spokesmen:

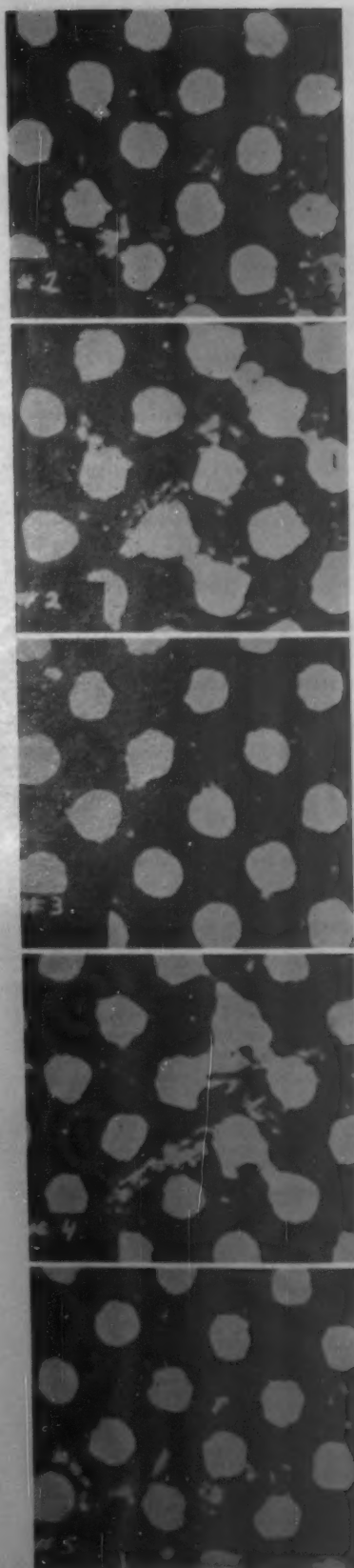
In 1954 total woodpulp production was a record 9,497,182 tons and newsprint, 5,984,207 tons, also a record. Other paper totaled 2,400,000 tons.

Canadian chemical pulp production exceeded 4,000,000 tons for the first time in history in 1954, the biggest increases being in bleached grades. Groundwood production hit a record of 5,280,000 tons. Pulp exports to U.S. were steady, but overseas exports of chemical pulps rose 43% and of groundwood, 20%. Relaxing of trade barriers abroad was expected to stimulate these exports. Pulp exports of 2,173,000 tons were \$280,000,000.

Coated and book and writing paper output increased. Easing of restrictions in Britain and elsewhere, it was hoped, would improve the export picture. Paperboard output was slightly lower than in 1953, but here also the easing of import licenses in Britain was encouraging. Wrapping paper output—246,000 tons—was second highest on record, double the production 15 years ago. Specialty paper production, especially for packaging, has increased over 100% since the war.

Paul E. Roberts, vice president of Rayonier's Alaska Pine & Cellulose subsidiary, reported that British Columbia's paper and market pulp production exceeded 1,200,000 tons in 1954, about 12% of Canada's total. With three more new newsprint and kraft mills announced, and others to come, he forecast that "the day may not be far off when British Columbia produces 25% of Canada's total pulp and paper output."

Overall 1954 output of Canadian pulp and paper mills was 6.5% more than in 1953 and 5% over the record year, 1951. Gross value was \$1,200,000,000.



## Why Printing Paper Variations Have Become More Critical

PULP & PAPER gathers some statistics that have bearing on a Montreal talk on coated paper.

● In an indirect way, the big coated magazine paper mills and, in fact, all the mills which are making publishing papers have an important stake in the competition between different forms of advertising—magazines, newspapers, television, radio.

Take, for example, *Life* magazine, with an advertising revenue alone of over \$114,000,000 in 1954; *Sat Eve Post* with \$77,000,000; *Time* with \$35,000,000; *Look* with \$26,000,000. They can't rest lightly on their oars, when seeking business in those figures, or they could slip fast downstream. The paper they use is making a bigger difference today than it ever did.

The *Time-Life* group of magazines spends annually over \$80,000,000 for distribution and production; about half of it for paper. Because of (1) rising postal rates and (2) higher printing costs, Time Inc. is endeavoring to use a lighter basis weight paper, but with the same opacity, bulk, print quality and mechanical performances as the heavier weight. Both coating and rawstock weights have to be reduced, as clay and adhesives in the coating usually make up about 16% of the sheet weight.

Consolidated Water Power & Paper Co. and The Mead Corp., with the assistance of R. T. Vanderbilt Co. and other suppliers, did pioneering work to get this lighter sheet of equal quality. Calcium silicate is used as a filler. Lighter weight paper can save *Time-Life* \$800,000 a year in distribution costs alone.

While none of these figures were mentioned in a fine printing papers session of the Technical Section of the Canadian Association in Montreal in late January, they were the background for that session. The above

### Multi-Millions of Dollars Are At Stake in This Kind of Printing

From top to bottom of next column, are sample coated paper printings from Springdale Laboratories of Time Inc. Numbered, 1 to 5 from top to bottom of the column, they show variations in quality when three front rolls—1, 3 and 5—were run alternately with two back rolls—2 and 4—and the pressman made no adjustments. He chose to turn out a portion of the printing below standard, rather than stop production in order to make impression changes. Reel-to-reel variations are not as bad as across the web (front vs. back).

PAUL THOMA—  
"Paper variations are critical at lower basis weights and faster press speeds. Economics force us to be interested."



facts and figures, gathered by PULP & PAPER, dramatically point up a problem raised there by a *Time-Life* spokesman.

### WHY SAFETY MARGIN IS LOWER

—They particularly underline the talk in Montreal by Paul J. Thoma, who is in charge of testing, evaluation and development at Time, Inc.'s research laboratories at Springdale, Conn. At Springdale, a 100-man staff is at work on papermaking and printing techniques, on inks, plates, and all the elements affecting their production costs.

"We have found that paper variations, which formerly could be tolerated, now become critical at lower weights and higher press speeds," he said. "In dropping basis weight, the margins of safety insofar as printing quality and mechanical performance have been reduced."

To combat rising printing costs, *Life-Time* has had to increase press speeds and reduce press down time, and this, too, has increased the importance of paper uniformity.

"Each web break represents a greater loss of production, and less time is available for the pressman to make adjustments to overcome paper vagaries which affect quality," said Mr. Thoma. Frank B. Lincoln of Springdale collaborated with him in presenting a paper which showed, with slides and displays, how paper variations are a prime source of printing troubles. Although Canada is making more magazine paper each year, many more mills in the United States are concerned with this problem.

Mr. Thoma told how Time, Inc., engaged trained engineers and made extensive studies to try to settle the perennial puzzlers as to whether printer or papermaker was at fault when press

performance was poor and spoilage up. It could not get the answers from paper or printing technicians, but it had to cooperate with both. Most of its printing and paper is cost-plus.

The final judge who has to be satisfied is the advertiser. His copy must be matched in shade, smoothness, etc., or he may prefer other media. Then the publisher, printer and papermaker all lose.

Time, Inc. normally experiences one web break or less per ten rolls of paper run. Despite many tests made, some variations still are puzzling.

Variations from reel to reel, in even its best paper, costs Time, Inc. tremendous sums each year, he said.

**COATED PAPERS ARE OF CONCERN**—Variation in printability of machine coated book papers is of much concern to Time, Inc. Its studies indicate three kinds: Across the web variation, reel to reel variation, and variation from top to wire. Printers are satisfied with a fair sheet and prefer it to one that jumps from excellent to poor. Variations in plates, packing, ink level and impression prevent an

accurate check on paper. In fact, a packing change on the press can cause the same printing effect that a rough sheet of paper causes.

Deviation from top to wire was graphically presented by color pages from *Life*, one showing a woman in a red dress and the other a cigaret ad. When the paper roll was reversed, so these subjects were printed on the opposite side of the web, the variation in the printing of the woman's picture was very great, because of subtle colors and flesh tones, but not the ad, which had a solid background.

## Electric vs. Gasoline Lift Trucks

Canadian meeting hears International Harvester's experience; questions asked of mill's buyer of trucks

• What kind of industrial power trucks should you buy for your mill?

F. H. Wiley, general supervisor of materials handling research for International Harvester Co., Chicago, in one of the papers presented at the Technical sessions of the CPPA in Montreal, presented what his company's decisions were as to the criteria for selecting such equipment. These are based on experiences with more than 1,100 trucks—380 are gas-powered, 419 are gas-electric, 286 are electric.

On the basis of his paper, **PULP & PAPER** also questioned an executive of one of the biggest American kraft pulp and paper mills, which uses many industrial power trucks, as to the advantages—gas vs. electric. Some interesting additional ideas were forthcoming.

But, first, as to Mr. Wiley's conclusions.

"Originally, we only had gas, gas-electric and electric trucks to consider," explained Mr. Wiley. "To further muddle the picture, we now have gasoline with torque converter drives, liquified petroleum gas units, electric units with batteries of longer life and diesel power units."

**HOW WILEY COMPARED THEM**—To the question "what to buy," he made these points:

Initial cost of an electric truck is 2 or 3 times a gas truck of same capacity, but now—in between—is a gas truck with torque converter, with operating characteristics similar to an electric.

Fixed charges are higher for battery units, including depreciation (though some makers claim twice the life);



**INTERNATIONAL HARVESTER'S F. H. WILEY (left)**—"The customer must analyze his needs."

**FULLER CO.'S HANK STOEES (right)**: "Advantage of pneumatic loading of chemicals is no losses and direct delivery to storage."

operating charges are higher for gas; electrics have advantages for short hauls and lower stacking; gas trucks for longer hauls, longer inclines and higher stacking.

Reputable vendors, he said, can design especially to meet your needs which are governed by working area, material, movement time and rate, safety and costs. Also, compare the services offered by vendors.

Electrics are preferred where noise and fumes are objectionable, but liquified petroleum trucks have changed this picture, but bring in safety problems. Gas trucks usually require more down time for service, he said.

He said it was too bad many operators of \$4,000 to \$10,000 trucks were not properly trained. But in favor of trucks he said one-third of industrial accidents were from handling material, and Illinois figures show individual hernias cost \$250 and

back injuries average \$133, besides suffering to the men.

Harvester found repairing truckways reduced tire and wheel maintenance. Also that preventive maintenance increased motor life between major overhauls from 1,500 to 5,600 hours, and they are shooting for 6,600 hours.

**PAPER INDUSTRY EXEC COMPARES THEM**—Here is how a leading kraft mill executive in the United States compared electric vs. gas trucks, when asked to comment on Mr. Wiley's conclusions:

"Very zealous commercial interests are pushing both gas and electric trucks, but for heavy jobs, electrics, with adequate batteries, are prohibitively big. For lighter jobs, they work out fine.

"Advantages of gas fork trucks are: Lower first cost, faster in accelerating, lifting and traveling, easier to learn to drive, generally smaller and more convenient for same lift capacities.

"Advantages of electric trucks are: Longer life, electricity cheaper than gas, higher percent availability, lower maintenance, no fumes, no fire hazard, no noise."

He suggested it would help mills buying trucks of any kind if truck people could advance some good tests for use in selecting lift truck operators. Some study, he thought, also ought to be made on the economic height for a palletized paper warehouse, what pallet sizes fit the paper industry, typical man-hour-per-ton costs for shipping various paper products and what the optimum roll diameters ought to be for all kinds of box and bag plants, counter rolls, etc.

## What Does Handling Chemicals Cost?

Cost figures and other data on manual, mechanical and pneumatic methods of handling mill supply chemicals, gathered as a result of questionnaires sent to U.S. and Canadian mills, were reported at the Montreal Technical sessions by Henry A. Stoess, Jr., sales engineer for Fuller Co.

His report was based on a TAPPI handling project in which Wm. R. McNally, of Link-Belt, C. E. Patch, of Tuttle Co., and A. P. Schnyder of Ebasco assisted, with much new data added.

Only about one-third of the mills answered, but interesting data was disclosed. Costs per ton of mechanical vs. pneumatic handling were close in such things as clay and salt cake, but discussion showed direct storage by pneumatic means was an advantage. One questioner pointed out there was usually a small percentage of clay losses in other than pneumatic handling. Pneumatic systems handle about 10 tons of clay an hour, though English china clays take a little longer to handle, as their moisture content is higher, 7% to 12%.

Average yearly receipts of reporting mills unloading bulk clay pneumatically is 12,375 tons, unloading mechanically (car scoops and mechanical conveyors) is 5,400 tons and manually (by shovel into mechanical conveyors), 2,880 tons. The TAPPI project figured costs at 30 cents a ton pneumatically; 29 cents, mechanically, and \$1.65, manually. Concrete silos are the most popular kind of storage used, followed by tile and steel.

Average yearly receipts of mills unloading pebble lime pneumatically is 8,100 tons, mechanically, 7,600 tons, and manually, 6,930 tons. Costs were figured at 34 cents a ton, pneumatically; 33 cents, mechanically, and \$1.20, manually.



**Many Americans at Montreal**

Actually, hundreds of Americans attended the Montreal meetings. Here are some who figured in recent news, personal and otherwise (l to r): WILLIAM E. GREENE, now 80 years old (his birthday was Jan. 18), but still active for Stowe-Woodward; JOHN J. McDONALD, Mgr. of Brown Co. Pulp Sales, who came for pulp sessions even though Brown sold Canadian holdings; J. C. (PETE) BAR-

Average yearly receipts of mills unloading salt cake pneumatically is 8,350 tons, mechanically, 13,500 tons, and manually, 6,040 tons. Costs: Pneumatically, 30 cents a ton; mechanically, 32 cents, and manually, \$1.20.

Starch is received by rail and truck in bags. Most mills unload by pallets and use fork trucks to storage. Average unloading cost of reporting mills was \$1.50 and annual deliveries ranged from 13 to 6,300 tons per year.



**This Team Now Separated**

ANDREW KILLEN (left), who was Gen. Supt., Bowaters Newfoundland Mills, when the big No. 7 Dominion Engineering Fourdrinier started up a few years ago, is now roving representative of Ontario Paper Co., working closely with Bruce McAdam, its Gen. Supt. DON LAUGHLIN (right), born in Newfoundland, was Andy's Chief Assistant at Bowaters Newfoundland, and before that at Quebec North Shore, where they expected newsprint machines that long held world speed records, is now traveling for Niagara Wire from Winnipeg to Newfoundland. He's the papermaking expert for Niagara, and works closely with Floyd Bassett, Supt. of the Niagara Wire Works.

### Three of Four Killens Are Now Retired

The British-born Killens are a famous papermaking family in England and Canada. They come from Somerset, where the folks call it "Zummerzet." For those who haven't kept track

of the famous brothers, here's information recently gathered by P & P:

Andy Killen, former general superintendent at Bowater's Newfoundland Mills where he helped to start up their high speed 284-in. No. 7 Dominion Engineering Fourdrinier about four years ago, is now a roving representative of *The Chicago Tribune's* Ontario Paper Co.

Tom Killen, long Bowater's No. 1 papermaker, headquartered in London, and chief of papermaking for all their mills, has now retired.

Joe Killen, formerly operations executive man with Anglo-Canadian Pulp & Paper Mills, has retired.

Bert Killen, former paper mill supt., Pacific Mills, Ocean Falls, B.C., and also at Powell River Co., Powell River, B.C., likewise has retired.



Sales staff of fast-growing Pulp & Paper Mills Accessories Ltd., of Montreal (l to r): TOM CARROLL; CHARLES MAASE, Sales Mgr., and SVEN GREENWALL.

### Maase Firm Represents Emerson, Loding and Valley

One of Canada's fastest growing sales engineering firms for pulp and paper mills of the Dominion is Pulp & Paper Mills Accessories Ltd., 6139 Cote de Liesse Road, Montreal.

Birger A. Maase, first cousin of Ray Peterson, president of Valley Iron Works, is president of P&PMA, and he founded the firm when he acquired manufacturing and sales rights to a wax-impregnated maplewood suction box cover developed at International Paper's Gatineau, Que., mill and now widely sold. Dan Charles Agency, Seattle, handles the box cover business on the Pacific Coast.

Sam Crocker, Jr., sales manager for John W. Bolton & Sons Inc., Lawrence, Mass., announces that the Maase firm will represent Bolton in Canada for Emerson showers and magnetic traps.

The Montreal company also handles Loding Engineering Corp. doctors and—you guessed it!—naturally, it represents Valley Iron Works equipment.

Charles Maase, son of the president is sales manager. Sven Greenwall, a veteran trained in the Swedish industry, and Tom Carroll, complete the sales staff.

THEL, Technical Director, Paper Chemicals Dept., American Cyanamid (just since early 1954); CHESLEY S. YOUNG, who now covers the continent for Swift & Co.'s adhesives and, especially, its new process glue; VERNON L. TIPKA, Asst. to President and Mill Mgr., St. Lawrence Paper Corp., where he directs an improvement program, and WARD H. PITKIN, recently moved from Oakland, Cal., to take new sales executive post in Dorr-Oliver Inc., at Stamford, Conn.

# JUST LOOK AT ALL THESE THINGS BIRD JONSSON SCREENS ARE DOING

**To Help Produce  
Better Stock  
And More Of It  
Per Day At  
Lower Screening  
Cost Per Ton**

*Ask us to make recommendations,  
layouts and estimates.*

**BIRD**  
MACHINE COMPANY  
South Walpole  
Massachusetts

BIRD JONSSON SCREENS are knotting or bull screening up to 200 tons of groundwood or sulphate stocks per screen per day at  $2\frac{1}{2}\%$  consistency, using 3 HP or less. Where the mill layout permits, Jonsson Screens continue bull screening and knotting to excellent advantage.

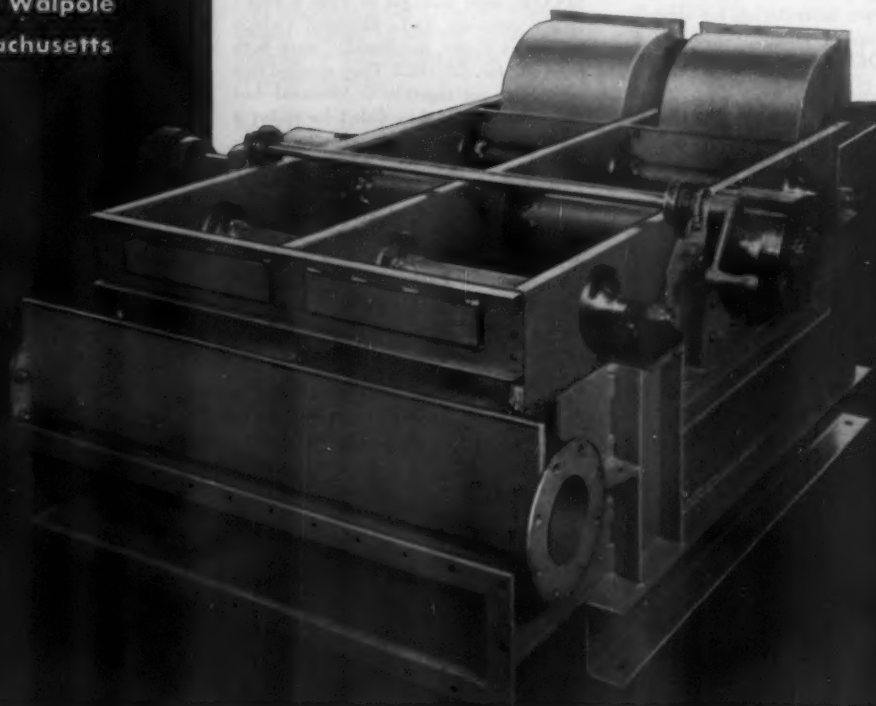
Jonsson Screens are knotting sulphite and soda pulps up to 100 tons per day at  $1\frac{1}{2}\%$  consistency.

They are screening out knots, chips and shives from brown stock ahead of the washers at up to 150 tons per screen per day of stock from 1.3 to 2.25%.

They are knotting and screening building board, filler and straw stocks more efficiently and economically than ever before.

They are doing a superb screening job on waste paper and deinked stocks.

In all cases cost of operation and maintenance is extraordinarily low.



## 55 Names and News from an Editor's Notebook Gathered at the '55 Montreal Meeting ✓ ✓

Jottings from an editor's notebook at the 1955 annual Canadian meeting in Montreal:

**JIM LANE**, the former International Paper engineer in New York, and now for many years divisional manager of Quebec North Shore Mills, may have known his president, **CAPT. ARTHUR SCHMON** was going to be the surprise choice as new CPPA chairman, but if he did, he kept it a secret. **MRS. LANE**, incidentally, is girlhood New Jersey chum of the sister of **ADMIRAL "BULL" HALSEY**, U.S. Navy, and often has her as a guest in Baie Comeau. . . .

**WILLIAM W. HICKEY** of Rotaread Corp., Bronxville, N.Y., had news that the first combination Deculator-Cleaner equipment, using the Bauer Cleaners in combination with the Deculator, had started up at Longview Fibre out West. . . .

**CHES YOUNG**, from the stockyards, Chicago, is covering the continent now for Swift & Co. adhesives, used in many papermaking processes from tissue machine additives to colloids for savealls. He joined up in Montreal with **G. F. COMMANDER**, Swift Canadian Co. . . .

**DWIGHT STOCKER**, president of KVP Co., Parchment, Mich., fresh from negotiating merger with Watervliet Paper Co., and **B. F. AVERY**, KVP Ltd., Espanola, Ont., led delegations from those affiliated mills.

**SAM CROCKER, JR.**, sales manager of John W. Bolton & Sons, Inc., Lawrence, Mass., had news of a new son in his family, born to his wife, Betsie, in Lawrence on Dec. 13. The name is **RALPH WILSON CROCKER**. . . .

**HAROLD HOLDEN**, president of Eastern Corp., was pleased with the general optimism of his Canadian colleagues. . . .

**J. J. McDONALD**, pulp sales manager for Brown Company, had no more Canadian pulp to sell for the first time, as I.P. now owns the former Brown Canadian operations, but he found a lot in common to discuss with pulp men, especially the rising overseas markets. . . .

**ALEX ERIC STEWART**, development



### Canadian Leaders

**FRED W. BRADSHAW** (left), Acting Mill Mgr., Consolidated Paper Co., Ltd.'s 9-machine mill at Grand Mere, Que., visits with **HAL CUNNINGHAM** (right), Vice Pres. and Mgr., Paper Div., Dominion Engineering Co. Ltd.

engineer for Dominion Engineering, after a serious illness several months before, was back in the swing, fully recovered, and glad to be with old friends. . . .

**TALBOT PETERSON**, of Valley Iron Works, Appleton, Wis., and **CHARLES MAASE**, sales manager of Pulp & Paper Mill Accessories, Ltd., Montreal (which represents Valley, incidentally) were both born on Mar. 22, 1922. They recalled this when they got together in Montreal—but here's something they didn't know for a long time—until very recently—their fathers are first cousins! They are **RAY PETERSON** and **BIRGER A. MAASE**, presidents of the two companies. . . .

**TED ROOT**, new vice president of the recently created Black Clawson Co. of Canada, brought his family to see their new home in Montreal on the day the convention opened. Their address: 4630 Prince of Wales Ave. Their moving van arrived in town the same day from Atlanta, Ga. Ted and their two children were born in Syracuse, N.Y., and his wife, Patricia, in Portland, Ore. . . .

**GEORGE BALKO**, assistant to the president, Richmond Pulp & Paper Co., Bromptonville, Que. He went there from Palatka, Fla., where he was manager, and got into the thick of new developments all over again. . . .

**CHARLES H. SAGE**, vice president and director of Kimberly-Clark, holds top titles in three K-C Canadian affiliate com-

panies, so he was just as much at home in Canada as his own Wisconsin. . . .

**ROY FOOTE**, Powell River Co.'s sales chief, made the trip across the Dominion and wasn't sorry about the cheerful news he heard regarding industry affairs. . . .

**BOB FAEGRE**, president of Ontario-Minnesota P & P and executive v.p. of the parent Minneapolis firm, had news of expansion under way at Kenora. . . .

**HENRY OSTROWSKI**, formerly of Pacific Mills, who was chairman of the first big Pacific Coast Tri-Way meeting of Supts. and Technical groups, is chief chemist of Hinde & Dauche Paper Co., Trenton, Ont., but is soon transferring to the new H & D plant covering 8 acres at Toronto. It is one of 7 Canadian box plants now belonging to West Va. P & P, as well as two paper mills in Toronto and Trenton, Ont.

**ED ANDREWS**, of Minneapolis Honeywell, was interested in discussions, formal and otherwise, where the new trends in that new expanding magic of industry—automation—was the main subject. His company sees a big future for it.

**N. H. FYFFE**, of Oldbury Electro-Chemical Co., whose sodium chlorate is a product for mills putting in the new chlorine dioxide bleaching plants, was interested in Canadian contacts because it was here



### Couple of "Buckeyes" in Mixed Company

Ohioans meet with a New Yorker and Canadian (l to r): **LLOYD WHIMS**, Gen. Supt., Mill Div., Ohio Box Board Co., Rittman, O.; **SAM WEBER**, Sales Mgr., Hamilton, O., Div., The Black-Clawson Co.'s, who led a technical session on board making; **R. C. GOODWIN**, director of Sales, Black-Clawson's Pandia Div., and **JACK LIMERICK**, Research Dir., Bathurst Power & Paper Co.

that the first CIO<sub>2</sub> manufacturing and bleaching in America was done—at CIP's Temiskaming, Que., mill.

**SAX FLETCHER** and **BILL METCALFE**, secretary of J. O. Ross Engineering Corp., New York, and **I. F. GSCHWIND**, who heads the new Ross Midwest Fulton Corp., had an opportunity for getting together with **F. W. HOOPER**, **G. J. CHALMERS**, **H. M. JAMES**, **D. F. NELMES**, **PAUL SPRINGUEL** and **R. R. WILLIS**, of Ross of Canada. Some complete full length hoods Ross built for Canadian mills are sights worth seeing in the Dominion.

**TOM HARGREAVES**, manager of Elk Falls Co., Duncan Bay, B. C., said the target for the new kraft pulp mill there is July 1956, and the Crown Zellerbach paper mill it will feed with pulp at Antioch, Calif., is Sept. 1956.

**NICHOLAS SHOUMATOFF**, West Virginia Pulp & Paper Co. Engineering Dept., who did an outstanding job for several years in the research and information-gathering on kraft digester corrosion, came to Canada with a new interest. He is now working on special papermaking problems. Nick's mother was the distinguished painter for whom President Roosevelt was sitting when he died in Georgia.

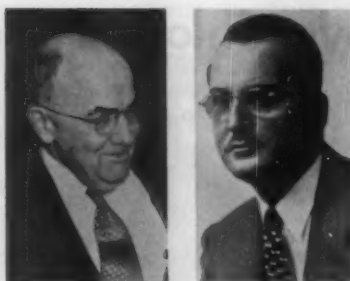
**R. M. LEIGHTON** of Stowe-Woodward, up from the States, let the cat out of the bag when he revealed that **WILLIAM E. GREENE**, also on hand and getting around as actively as most any one, had recently celebrated his 80th birthday at his Naples, Fla., home. He was born in Cleveland, O., Jan. 18.

**FRED HURTER**, of Stadler, Hurter, engineers, was back from Europe again and he verified the reports of the phenomenal comeback industrially and economically of Germany.

**MURRAY BENNETT**, president of Chemical Linings Inc., looking fine and in excellent health after taking 40 or more pounds off, since his recent illness, came up from Watertown, N.Y., where he is building a new plant.

**DR. MAMERTO CRUZ**, from Research and Development Division, American Viscose Corp., Marcus Hook, Pa., a native of The Philippines, was especially interested in research papers on viscose pulps and cellulose. He met former associates from MIT and Syracuse U. His company is a partner in Ketchikan Pulp, using its products for rayon staple fiber.

**WILLIAM M. McNAIR**, regional manager, St. Regis Sales Corp.'s Pulp Division, now stationed at 1721 Section Road, Cin-



#### **Carmichael Sees Old Friends; Batchelor Moves to Montreal**

**MIKE CARMICHAEL** (left), retired former Director of Stainless Steel Div., Shawinigan Chemical Ltd., Montreal, succeeded in that post by **C. K. (Bud) Lockwood**, came back to the meeting to see old friends; **THOMAS G. BATCHELOR** (right), new Managing Director of Hercules Powder Co. Canada Ltd., Montreal headquarters. Ray Bishop is Sales Mgr. under him. Tom was Res. Mgr. for Hercules at Burlington, Ont., and since 1946 has been Asst. Director of Sales for Paper Chemicals in Wilmington, Del. Mr. Bishop was Mgr. at Burlington recently.

cinatti, 37, O., was on hand. He will be in charge of selling the first St. Regis market pulp made in Canada when the Edson, Alberta, mill is built.

**FRANK PTACEK**, manager of engineering sales for Yarnall-Waring Co., Philadelphia, reported his company has new improved digester blow valves ready now, as well as new steam plant equipment.

**ALBERT S. QUINN**, president of Stebbins Engineering Corp., Seattle, made the longest journey of anyone to attend. It included a visit to his home office in Watertown, N.Y.

**RALPH BERGSTROM**, manager of pulp and paper industry, Swenson Evaporator Co., div. of Whiting, Harvey, Ill., had a chance to get together with his colleague, **ROY GARNETT**, Whiting Corp. Ltd., manager, Toronto.

**DR. E. C. JAHN**, pulp and paper school, Syracuse University, saw a lot of his old students, and this reporter, at least, heard for the first time how he roamed around Finland freely as the only American on the loose there when Russia and Germany were fighting over it. And he was bombed by both Russians and Germans.

#### **Bob McClellan Sees Old Friends**

**BOB McCLELLAN**, now the manager in Canada of rather new Nopco Chemical Co., Ltd., had a chance to see old friends from the days when he was Nopco chief in Chicago. His associate now is **FRANK FAUST**, whose company merged with Nopco in Canada.

**WARD PITKIN**, now heading filter di-

vision sales for the merged Dorr-Oliver Inc., at Stamford, Conn., where he moved from California recently, said he has one son still at Stanford University and another in naval aviation at Pensacola, Fla.

**M. W. "STUBBY" DAVIS**, president of Sherbrooke Machineries Ltd., with offices on Dominion Square, now has a staff of four in regular contacts with the mills, since the Sherbrooke (Impco) lines of equipment are more diversified. **TOM W. TOOVEY**, manager of sales, has enjoyed a career on both coasts, and **JOSIAH (SY) WOOD** and **ROSS TAIT**, junior of the staff, as well as **BILL GIRLING**, field man who lives mostly out of his suitcase, were around.

**JIM MOYNIHAN**, now the groundwood supt. at Bowaters in Tennessee, whose career has taken him from Mexico and Texas to Newfoundland, found a lot of old Canadian friends.

**GUS HELLSTROM**, pioneer in introducing Swedish equipment to North American mills over many years, wished many a Happy New Year to friends, but took it easier, with son **KLAS**, to pinch-hit for him.

**KEN CRAWFORD**, one of the "traveling" Canadian peddlers from Coast to Coast, for Union Screen Plate, took convention in stride, as he was close to home.

**P. S. BOLTON**, veteran Robert Cair executive from the States, got together with key men of Cair Canada, including **J. S. BABBITT**, the Canadian vice president.

**G. P. BROWN**, whose years with Watrous go back a long time, picked the Queens, and **G. A. PETERSON** and **A. J. CIRRITO**, both for Rice-Barton, chose the Berkeley, for quiet little hostilities away from the "madding crowd."



#### **Faster Newsprint with Sectional Drives**

That subject interested these men in a Montreal huddle (l to r): **WALTER SILVERSON**, Mgr. of the Harland Drive Dept., Bepco Canada Ltd.; **BUD F. GRAY**, Service Engineer for Bepco, who has helped start up some of Canada's fastest machines; **WALTER SCHAELECHLIN**, who came from Switzerland, now with Westinghouse, Buffalo, a speaker at Montreal; and **FRANK DE SCHULTHESS**, Bepco Sales Engineer.

## 30 Mills Will Have Chlorine Dioxide Plants

As new process spreads, Canadians honor Dr. Rapson, who directed building of first plant of kind at Temiskaming, Que. PULP & PAPER'S visit to a new U.S. plant is described.

● The annual highest award for technical achievement in the Canadian industry—the I. H. Weldon Gold Medal—went this year to a University of Toronto professor.

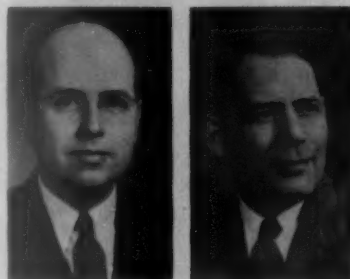
But it wasn't for anything he did at the school, which is also his alma mater, that won the 1955 medal for Dr. W. Howard Rapson. He is also a native of Toronto, incidentally.

The honor was for his work some years ago at Canadian International Paper's Temiskaming, Que., mill where he developed the first continuous process for the manufacture of chlorine dioxide.

It took a few years for the industry to awaken to the value of that work. The award was made at the Montreal CPPA convention Jan. 27.

Today, 30 mills in North America, desirous of higher brightness in pulp, especially for market, have gone to chlorine dioxide bleaching or will have the process available. Most are big mills. Safer and simpler processes for making  $\text{ClO}_2$  right on the mill property made this major trend possible.

Dr. Rapson's process is regarded as outstanding for its simplicity and safety factors, though it costs somewhat more than others. Dr. Rapson directed installation and started up the chlorine dioxide plants at both American and Canadian I.P. mills. These include two such plants at Temiskaming, one at Hawkesbury, Ont., and one at the Southern Kraft Division's dissolving pulp mill at Natchez, Miss.



DR. W. HOWARD RAPSON (left), whose pioneering work in developing chlorine dioxide process was recognized in Canada, and DR. WARD HARRISON (right), Vice Pres. in charge of Production, Riegel Paper Corp., who also directed construction of one of first chlorine dioxide plants in U.S.A. in North Carolina.

The American TAPPI has elected Dr. Harrison its Vice President. In two years he is due to succeed K. O. Elderkin as President. Meanwhile, Dr. Rapson has succeeded Dr. Harrison as Chairman of TAPPI's Pulp Purification Committee, one of few Canadians to head a TAPPI committee.

He was in charge of the pioneering research at Industrial Cellulose Research Ltd., Hawkesbury subsidiary of C.I.P. Its laboratories house pilot plants for making cellulose, rayon, cellophane and plastics. Sigmund Wang is president.

Ten chlorine dioxide plants, in use or available for use, are at mills making dissolving pulp or high alpha pulps. There is one at the LaTuque, Que., kraft mill recently acquired by

International from Brown Co. Five of the 20 plants are for sulfite pulp mills, the rest are for kraft pulp mills. Many of the latter also use the pre-hydrolysis process in making kraft.

**NEWEST IN THE SOUTH**—Most recent  $\text{ClO}_2$  process and bleaching to start up is the Mathieson installation at East Texas Pulp & Paper Co., which makes a bleached kraft food board and bleached Eastex market pulps, and at the I. P. mill at Bastrop, La. Another new one is the Solvay plant at St. Mary's, Ga.  $\text{ClO}_2$  bleaching is also planned at the new St. Regis market kraft pulp mill in Alberta. At Crossett Paper Mills in Arkansas a new  $\text{ClO}_2$  process starts up in October or November. Another in the South is at Camp Mfg. Co., Franklin, Va.

After I.P.'s pioneering, the next one in North America was a Swedish process at MacMillan & Bloedel's kraft market pulp mill in Nanaimo, B.C.

Riegel Carolina, at its new Riegelville, N.C., put in the Solvay process for bleached kraft pulps. And Potlatch Forests Inc., Lewiston, Ida., makers of kraft foodboards, also put in this process.

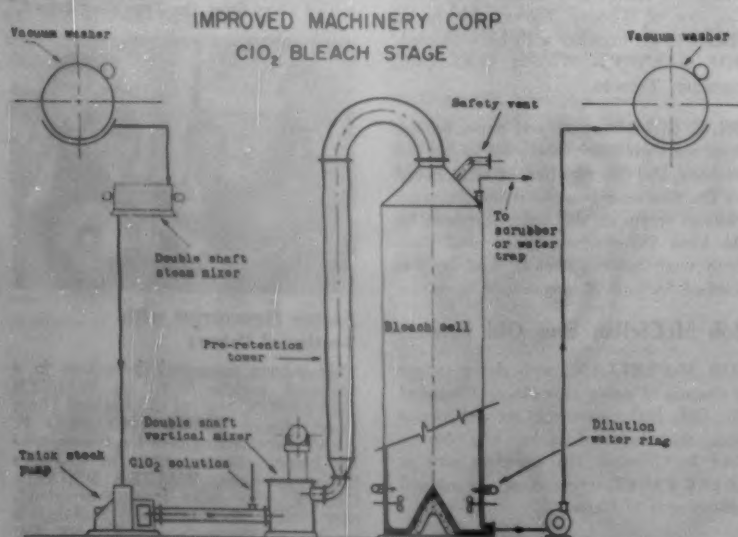
Not all of the 20 mills which have installed the chlorine dioxide plants and bleaching stages have made public announcement of this fact. However, in the industry, they are pretty widely known among suppliers and technicians working in that field.

P. H. Glatfelter Co., Spring Grove, Pa., announced its installation of the Solvay process in Dec. 1954 issue of PULP & PAPER. This capacity is 160 tons a day.

There are now eight  $\text{ClO}_2$  plants in Southern United States alone.

**SPECIAL EQUIPMENT FOR  $\text{ClO}_2$** —Minneapolis Honeywell has been especially active in the design and equipment of chlorine dioxide plants with graphic panels for automatic, safety-featured operations and continuous measurement of chemicals. These Honeywell panels and equipment are in many plants in East, Far West and South. Each operation is color-coded and the code is repeated in special acid proof bright-colored paint on the actual process piping and flow.

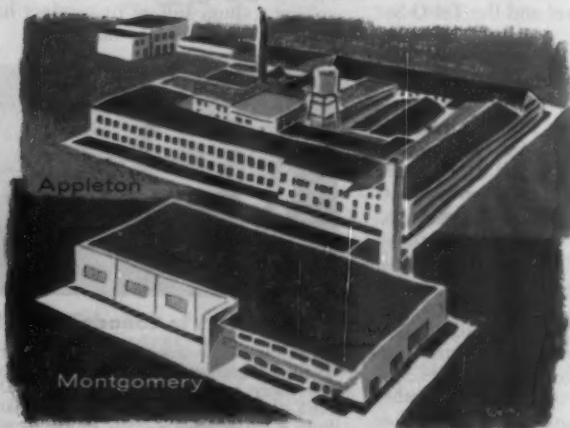
Dow Chemical's Saran lined pipes and glass linings are also acceptable and widely used in the  $\text{ClO}_2$  plants. Impeco and Sherbrooke Machineries in Canada design special equipment



FLOW CHART of typical chlorine dioxide bleach plant.



### Paper helps Mother all through the house



Happy the home where household papers do their countless and important chores. A tidier home, brighter and healthier too. From tissues for winter noses to gay colors for cupboard shelves—napkins to towels, food wraps to polishing cloths—Mother is really papering the house these days. Efficiently, economically, attractively.

And in at the start of household papers—in every field where paper goes to work... Fourdrinier wires. Appleton Wires. Good wires—by a 59-year test of industry-wide acceptance and use.

General Offices, Appleton, Wisconsin

Plants at Appleton, and Montgomery, Alabama.

## Appleton Wire Works, Inc.



for these plants. Towers and tanks are tile lined.

Chemsteel Construction Co. Inc. has had experience in building reactors, etc.

The Solvay Process Div., Allied Chemical & Dye Corp., New York, has featured development of chlorine dioxide processes.

Mathieson Industrial Chemical Div. of Olin-Mathieson Chemical Corp., also has a widely used process and it has a working agreement whereby Pennsylvania Salt Mfg. Co. of Washington, in the Far West, and Electric Reduction Co. of Canada, Ltd., are associated with Mathieson in advising mills or mill builders on engineering, installation and equipment in their areas.

Here follows a description of a new kraft mill generating plant in U.S.:

### Description of $\text{ClO}_2$ Plant in a U.S. Mill

A PULP & PAPER editor recently was permitted to visit one of the still non-publicized  $\text{ClO}_2$  generating plants built in the United States. Sodium chlorate, sulfuric acid and methyl alcohol are used in this process.

The clean and neat  $\text{ClO}_2$  manufacturing plant is a short distance from the bleach plant. It has a big Honeywell "ColorGrafic" panel in an air-conditioned room. Ingersoll-Rand provided the water cooling system. Three reactors and two absorption towers were tile lined by Chemical Linings Inc. All reactors have safety valves and Honeywell temperature controls. Inside the tanks, Vitro plastic was used. Saran lines the pumps, pipes and valves.

A specially built Impeco thick stock



### Talked About Improved Semi-Chem Pulps

(L to r) THAXTER W. SMALL, of Valdosta, Ga., Sprout, Waldron & Co., is on the phone. Others (l to r): HENRY OSTROWSKI, Chief Chemist, Hinde & Dauche Paper Co., Trenton, Ont. (West Va. P & P subsidiary), now transferring to Hinde & Dauche's new operations at Toronto; N. J. MYLES, Asst. Sulfit Supt., Quebec North Shore Paper Co., and C. W. (BILL) CONVERSE, Sprout, Waldron & Co. Inc., Muncie, Pa.



### Emery is a Consultant; Also Affiliated with Jackson & Church

BRUCE ARMSTRONG (left), head of Jackson & Church Co. Pulp & Paper Dept., Saginaw, Mich., was also in Montreal for the convention and met with: ROW W. EMERY (right), who has a general consulting office for pulp and paper and chemical industries at 1 Domino Court, Toronto 12, Canada. He is doing special work for Jackson & Church, developers of a new 2-stage bleaching process and manufacturers of Zenith screw presses and other equipment. Mr. Emery, a graduate of U. of Toronto, was Asst. Chief Engineer for Marathon Mills of Canada, Resident Engineer for Brompton and Project Engineer for Abitibi Power & Paper.

pump with a large capacity, pumps the  $\text{ClO}_2$  at 10% consistency into a 75 ft. high tower alongside the bleach plant. This is tile-lined. Glass-lined piping is used here. Glass and Saran are two preferred linings for handling  $\text{ClO}_2$ , instead of metals. As in other mills, the  $\text{ClO}_2$  bleach is the last bleach stage. A Honeywell graphic panel also is installed on the operating floor of the Impeco equipped bleach plant.

Extensive operator training is necessary for operating the Honeywell "ColorGrafic" panel and the Tel-O-Set control systems in the generating plant. Miniature instruments in the diagram show values of all variables and control adjustments are made right on the panel. Flow is from left to right. The panel about 14 ft. long x 7 ft. high. Pumps and blowers are push-button controlled and lights show when equipment is operating. Alarms sound to warn of any critical variables, but where certain hazards are involved, automatic adjustment takes place.

This is a Solvay plant, so sulfuric acid, methyl alcohol and sodium chlorate are fed into the first reactor, where major reaction occurs. Methyl alcohol is also supplied to the other reactors. Spent liquor goes to the second reactor, and after further reaction to the third. Close controls minimize the production of chlorine gas. There are level indicators for storage tanks and headboxes. All flows of these chemicals as well as of chlorate dilution water and of air to reactors, are controlled from the panel. Air passes

through steam heated coils and its temperature is automatically controlled. Reactants in each reactor are recirculated through heat exchangers, capable of both heating and cooling as required.

The gas generated in reactors passes through the two absorption towers to produce the bleach liquor. Automatically controlled cold water passes through the absorbers and the resulting liquor is stored until needed in the bleach plant. Storage level and flow and temperature of liquor to bleach plant all shows on the panel.

A pH control system automatically neutralizes spent liquor from reactors before going to the Kraft recovery plant.

**$\text{ClO}_2$  PROCESS IN GERMANY—**In a letter to PULP & PAPER, Max H. Schmid, president of the Waldhof paper mills of West Germany, compares the Kesting process installed in his Kelheim sulfite mill with those in use in America for kraft mills, as follows:

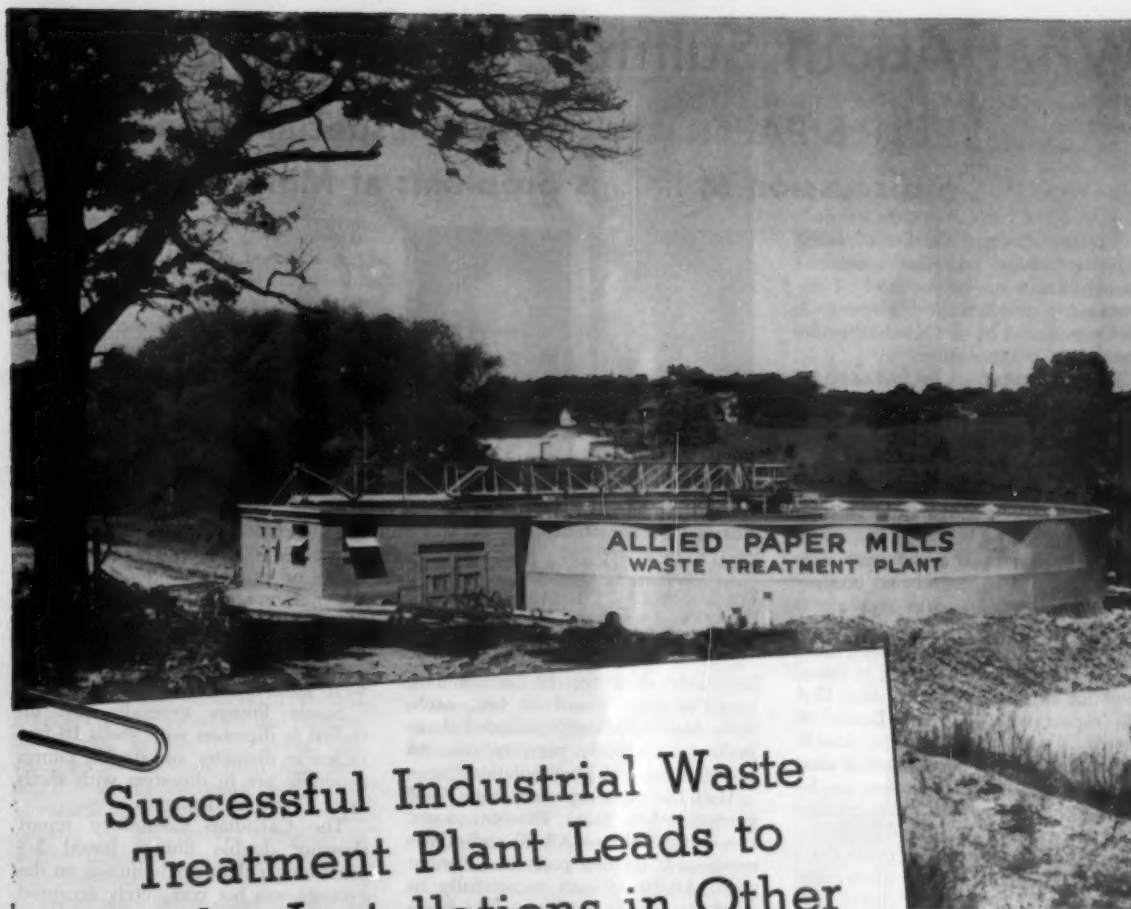
"The Kesting process calls for an electrolytic plant for chlorine production and requires considerably higher capital investment. However, on account of the extremely clever cycle and the use of hypochloric acid, instead of more expensive sodium chlorate, the cost per pound of  $\text{ClO}_2$  produced will be lower despite the capital investment. This, of course, refers to use of  $\text{ClO}_2$  in a sulfite mill.

"The processes used in America, on the other hand, have advantages for a kraft mill," he said. "If  $\text{ClO}_2$  is produced with  $\text{SO}_2$  as the reducing agent, or with methyl alcohol, the resulting sodium sulfate by-product has a ready use in sulfate mills."



### For Bowaters in Canada and U.S.

These two Bowaters executives formerly worked together in Newfoundland, now are many miles apart: GERALD PENNEY (left), Mill Mgr. of Newfoundland Pulp & Paper Mills, Corner Brook, Newf., elected Councillor to the Technical Assn. at Montreal, and VICTOR SUTTON (right), Mill Mgr. and Asst. to Gen. Mgr. at new Bowaters Southern Mills in Calhoun, Tenn. Formerly at Corner Brook and also Bowater research chief in London, he helped pick Tennessee site and was in daily control work over construction and equipment. Mr. Penney announced a 7-day week at Corner Brook in a drive to win more newsprint markets.



## Successful Industrial Waste Treatment Plant Leads to Similar Installations in Other Paper Mills in Michigan

This 90' dia. Type S Dorr Thickener is installed at the Monarch Book Division of Allied Paper Mills in Kalamazoo, Michigan. Feed to the unit is 4300 gpm of de-inking wastes containing approximately 0.3% solids. A clarified effluent, well within the requirements of the state pollution abatement authorities, is discharged to a nearby stream. The success of this Dorr Thickener at Allied has led to similar

installations in other paper mills in Michigan.

There's no "cure-all" for industrial waste treatment. But there's a good chance that Dorr-Oliver's diversified equipment and diversified experience can add up to the *right* kind of solution.

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# What About Sulfite Digester Life?

**PULP & PAPER interviews some specialists on basis of a discussion of linings problems at Montreal**

Factors affecting the life of sulfite digester linings and their problems brought forth one of the liveliest discussions of the technical meeting. It was precipitated by a Canadian sulfite committee questionnaire.

Ian M. McArthur, former assistant to the sulfite supt. (now assistant to groundwood supt.) at Canadian International's Three Rivers mill, said 35 of 51 mills questioned sent in replies. The data was tricky, in that it showed linings with shorter cooking times were giving 9.2 years life, while linings with longer cooks gave only 8.7 years, and apparently no one accepted that conclusion as representative.

But forced circulations, giving more even heat distribution, added to lining life, the statistics showed. Also that life expectancy of single linings is about 2½ years less than a double lining face course under similar conditions. Single linings, however, can be used satisfactorily and give greater production per blow, but double linings give greater shell protection. These conclusions were apparently accepted by most of the experts, but no conclusions could be drawn from data on temperature, pressure and washouts.

Lining specialists told PULP & PAPER that mills which washed out digesters with cold water and reported, no effect on linings were just lucky. The practice could not be generally approved, they said.

Mr. McArthur said the committee recommends this minimum cure for new linings: A 24-hr. air cure; steam cure raised to 100 degrees C. in 24



## Interested in Fighting Corrosion

(L to r) BILL DOBBIN, Alloy Metal Sales Co., of Toronto and Montreal; HERBERT O. TEEPLE, corrosion specialist for International Nickel Co., New York, and CHARLES TABBERNOR, MacDonald Bros., Winnipeg fabricators.



## Served on Montreal Panel

BEAUMONT THOMAS (left), Research chief for Stebbins Engineering & Manuf. Co., and FRANK J. HOAR (right), President of G. D. Jensen Co. Inc., discussed life of sulfite digester linings.

hrs., held there for 12 hrs.; 3 long cooks of 24, 16 and 12 hrs., each, with correspondingly reduced temperatures and slow pressure rise; no presteaming and precirculation.

Half the mills reported using joint mortar other than litharge, some specifying Stebbins AR-20 and others mentioning furfural resin and Furane resin. AR-20 is used successfully to point top domes, mill men told PULP & PAPER.

C. R. Tittmore of Gaspesia Sulfite, as panel moderator, and Beaumont Thomas, Stebbins research chief, and Frank J. Hoar, president of G. D. Jensen Co. Inc., led the discussion at Montreal.

Mr. Thomas said the most important qualities of digester brick are chemical resistance and resistances to thermal, mechanical and chemical spalling. Different qualities of brick are preferred for different cooking liquor combinations or faster or slower cooks. A completely versatile brick has not been available up to now.

## A VERSATILE BRICK MAY BE DEVELOPED—A

relatively less porous brick has been designed for mills going to ammonia base sulfite pulping, but some ammonia base mills in the United States, PULP & PAPER learned, are still able to use their old linings for a period of time depending on the condition of the lining at the time of conversion from one process to another.

A lining specialist told PULP & PAPER, in commenting on this session, that some day soon the industry may see a soluble base brick lining which

is satisfactory for calcium base pulping and vice versa. Up to now, soluble base brick has had a greater tendency to spall, but soluble base brick holds great promise for future use because of better chemical resistance without sacrifice of spalling resistance.

It was interesting to note the same point being brought up here at Montreal that was emphasized recently at TAPPI's kraft digester corrosion discussions. That is, that the only fair way to compare the lives of digester linings is on the basis of number of cooks or number of tons produced and not number of days or years of life. Today, cooks are much faster; there are many times more cooks in a given mill in a week than there were 20 or 30 years ago.

Single linings generally are installed in digesters with shells 16 feet or less in diameter and double linings generally are in digesters with shells over 16 feet in diameter.

The Canadian Committee report showing double linings lasted 2½ years longer than single linings on the average was not completely accepted by lining specialists interviewed later. They said the subject of lining thickness is somewhat controversial because most of the thick linings are placed in large diameter shells, many of which are subjected to fast cooking processes and with the large capacity of such shells the lining life per unit quantity of pulp production would be very much different, as compared with the thin linings, than would be indicated by difference in years.



## They Talk Sulfite Pulping

TOMMY KETTLES (left), who heads Canadian Stebbins Engineering & Mfg., Montreal; JOUKO NISSINEN (middle), Control Chemist of St. Raymond Paper Ltd., sulfite pulp mill at Desbiens, Que., and ALBERT S. QUINN (right), President of Stebbins Engineering Corp., Seattle, Wash., get together at Montreal meeting.

## New Canadian Mill Control Techniques

• Perhaps the most intensively scientific technical sessions held regularly by this industry are the annual Technical Section meetings of CPPA in the Sheraton-Mount Royal in Montreal in the last days of January. This is due largely to the propinquity and general influence of the Pulp & Paper Research Institute of Canada and the McGill University.

So, while Canadian management and associated American management men were having their closed sessions in the Mount Royal, the Hotel Windsor salons (where the young Queen stayed, as you quickly know if you enter its doors) or the CPPA offices in the Sun-Life Building, the technical men were really getting into deep stuff in the Mount Royal. In past years, such new inventions as the Culator and the Centri-Cleaner had their unveiling at Montreal, but there was nothing as sensational in the way of new equipment this year.

In the following pages of this issue, PULP & PAPER brings some summaries of a few of the Montreal Technical Section discussions which had particular interest in the U.S., along with some additional data from American sources—on the economic seriousness of variations in coated printing papers, electric vs. gas trucks, corrosion in sulfite digesters and economics of handling chemicals.

There were many other papers, of course, given at Montreal.

Worth singling out, especially, was one describing a new continuous method of determining weight increase of a wood chip during penetration of deaerated water, by using a quart spiral balance. This is expected to be an effective tool for studies of pre-treatments for improved penetration: Miss N. I. Paranyi, attractive



### Du Pont Was Well Represented

Du Pont men at Montreal included (l to r) MICHAEL LANGUEDOC, Du Pont of Canada Ltd., peroxide products; F. L. (ROY) FENNELL, Peroxide Sales Development, Du Pont Co., Wilmington, Del.; N. J. STALTER, Peroxide Products Dev. Mgr., Du Pont, Wilmington, and ERIC S. COOPER, Mgr. General Products, General Chemical Dept., Du Pont of Canada, Montreal.

WILLIAM S. CRAMP, Mill Mgr., St. Lawrence Paper Corp., Three Rivers, Que., is new Canadian Technical Section Chairman.



Turkish-born woman, and W. Rabinovitch, both of the Institute, presented the paper. Dr. T. N. Kleinert, a senior scientist at the Institute, described an experiment with practical applications in production of higher quality viscose pulps.

R. K. Strapp, assistant head of chemical pulping at the Canadian Institute, explained the new so-called Ross diagram, a graphical method for plotting data from extracting processes such as chemical pulping of lignocellulosic materials. This starts with a rectangular plot of the ratio of lignin to carbohydrate in pulp residue to lignin plus carbohydrate plus other constituents in the same residue. Superimposed is a skew grid representing coordinates for the quantity of each of the major constituents.

Use of the Ross diagram brings out relationships generally missed in masses of data. For instance, a Ross diagram compares soda, kraft and sulfite cooking of the same wood species. It should be helpful in following trends; may prove useful in mill control.

Another Canadian Institute paper revealed how a laboratory Dynopulper and a screen are used to measure the so-called cohesive rating of a high yield pulp as a guide to its ease of fiberizing. This, too, may prove useful in mill control.

**NEW SWEDISH EQUIPMENT—**C. L. Tomlinson, general pulp supt., the Cornwall mill of Howard Smith, son of a distinguished Canadian industry research pioneer, varied the technical presentations with some reminiscences on a Scandinavian industry tour.

He told of wide use of aerial ropeways for transporting pulpwood, sawmill chips, coal and even baled dry pulp. Control tower operators sometimes have loudspeakers to talk to workers on the ground. Power requirements of the airways are very low, and materials may be automatically loaded or dumped. One ropeway for all kinds of materials is 12 miles long.

He saw the Fengersfors 30 tons-a-

day Kamyr continuous pre-steam vessel, digester and washer system, previously reported in these pages, which he said is working satisfactorily. He also mentioned the Holst, Persson and Kesting processes for chlorine dioxide bleaching, all used in Sweden. Taxation regulations in Sweden make it advantageous to re-invest profits in bleach plants and other capital investments, he said.

An Ontario Paper Co. report told of advantages of a Ross-Hooper closed hood installation on its No. 2 machine, particularly improving machine room conditions. This company also developed an accurate measurement of the amount of wood required to make a ton of paper, which was explained.

W. S. Cramp, resident manager, St. Lawrence Corp., Three Rivers, Que., was elected new Technical Section chairman, succeeding J. B. Jones, mfg. manager for Ontario Paper. Mr. Cramp, born in Ottawa, was graduated from McGill, and worked at Bowater's mills in Newfoundland, 1929-44, when he joined St. Lawrence.

Gerald Penney, Bowater's Newfoundland mills manager, and J. W. Wing, v. p. and manager of Gaspesia Sulfite, were elected new councillors.



### New Fischer & Porter Equipment

Shown at Montreal convention was this new Fischer & Porter Chlorinator. CHARLES F. NORRIS (left), Field Engineer for F & P Canada Ltd., Toronto, is pointing to meterizing tube. A. H. BERRY (right), Sales Engineer for Williams & Wislon Ltd., is holding chlorine rate valve. This model, in production for about one year and a half, has been installed in ten Canadian mills.

### Flakt Products Co. Organized in New York

Arne Hallencreutz, former resident engineer for AB Svenska Flaktfabriken, of Stockholm, in the U.S., has been made president of the new American subsidiary, American SF Products Inc., 420 Lexington Ave., New York City.

He announced a branch office also will be established in Vancouver, B.C. SF Products Canada Ltd. has been active since 1953 in Montreal.

## Expansion Proceeds More Machines Announced

PULP & PAPER's report last month of at least 31 new machines being built for U.S. and Canadian mills, has been in part confirmed by several announcements since then.

Now International has announced its new plans for newsprint in the South. P. H. Glatfelter Co. announces \$12,000,000 for a new high speed Rice Barton machine at Spring Grove, Pa. Crown Z plans at Antioch, Calif., MacMillan & Bloedel's newsprint, board and pulp expansion at Port Alberni, B.C., and Scott's new machine at Winslow, Me., are all announced. Scott is making provision for a possible second new machine at Winslow (H & W subsidiary). Hudson Pulp & Paper announced their big plans for kraft tissue grades at Palatka, Fla., with a Rice Barton machine.

New machines are ordered or planned for Detroit Division of Scott, Port Huron Sulfite, Kalamazoo Paper and Lee Paper, all in Michigan, to be built by three different machine builders.

The R-W paper machine for Longview, Wash., Western Kraft's Bagley & Sewall machine, and Potlatch's new Black-Clawson machine are in the works.

Weyerhaeuser's new board machine at Longview is about ready. Scott added 16 machines by mergers etc. in 1954 and is adding two more at Everett. Crown and Kimberly-Clark will have new tissue machines in the Far West.

Beloit Iron Works was so far advanced in building a new board machine for International Paper, that it will be ready for installation in December in I.P.'s new LaTuque, Que., mill, not the original destination. Beloit is also building the new machine for Ontario & Minnesota, Kenora, Ont.

In New England, besides the additional newsprint machine for Great Northern, at least two other companies are getting new machines. Some 16 machines in all are "in the works" for the South, over the next two years. One or two more are being discussed in East Canada.

Continental Paper is rebuilding its No. 1 machine and added clay coating to its No. 2. Brownsville Board Co. is rebuilding a machine. Two digesters are being added by Halifax Paper at Roanoke Rapids, N.C.

In the converting field, St. Regis started up a new multiwall bag plant at Franklin, Va.; Crown Z announced a \$4,000,000 converting and box plant on Lulu Island, near Vancouver, B.C., and Sonoco announced a new branch plant in East Texas with Jim Henderson, manager.

## New IP Mill at Natchez or Mobile?

• International Paper Co.'s projected 300 tons a day newsprint mill, announced by Board Chairman John H. Hinman, in late January, may be placed on the Mississippi River either near Baton Rouge, La., or Natchez, Miss., or at Mobile, Ala., according to late, unofficial reports.

Mobile has many advantages, being headquarters for I.P. in the South and being near newsprint markets. The small portion of chemical bleached pulp could be made there or shipped in from other mills.

The company now has a large dissolving pulp mill at Natchez utilizing hardwoods (chiefly gum) for raw material. Mississippi sites are served by Illinois Central Railway through subsidiaries reaching into North Louisiana and Mississippi.

Located at Natchez, the mill would have advantages rising from its proximity to the existing plant. Mississippi's attitude toward industry is quite friendly. In Louisiana, the plant could be granted a 10-year ad valorem tax exemption. Both Baton Rouge and Natchez are industrial centers. Bridges span the river at both points. At either location, there should be no effluent problem. Alabama would welcome the mill, too.

Announcement was that 100,000 tons annually of newsprint would be produced in a mill to go into production late in 1956. Orders were being placed, financing being no problem. Estimated cost, \$20,000,000.

Current forest resources for pulpwood controlled by the company, including both fee ownership and long-term lease, approximate 3% million acres. The company has been pursuing a vigorous acquisition program, recently acquiring 39,600 acres from

JOHN L. HINMAN — says many Southern towns want new mill.



Louisiana Central Lumber Company in No. Louisiana, and some time past dividing the holdings of Vredenburg Sawmill Co., in So. Alabama amounting to 78,000 acres, with Hollingsworth & Whitney Co., now Scott paper.

I.P. also is building a new Pure-Pak milk container plant, with monthly capacity of 40,000,000 containers, at Waco, Tex. M. L. Quinlan, Batrop, La., container plant mgr., will manage the new Waco plant.

## Wins National Award

Charles W. Kent, son of Charles H. Kent, who was Hercules Powder Co. manager in Holyoke, Mass., for 20 years, until his retirement a year ago, is the 1955 winner of the national distinguished salesman's award, sponsored by the New York Sales Executive Club.

Former Postmaster General James A. Farley made the award to young Mr. Kent at the Waldorf Astoria Feb. 20. The winner lives in South Hadley, Mass., and is New England sales representative for the Reardon Co., Bayonne, N. J., paint makers.

His father, widely known in the paper industry, is now special assistant to the president, Hadley Falls Trust Co., Holyoke, Mass.



Gus Ostenson Looks Over Plans For "His Mill" With Engineers

Looking over plans for the new big kraft paper and liner board mill which Crown Zellerbach Corp. will have in operation at Antioch, Calif., in 1956—probably by September. Seated are: WILBUR LOWNDES (left), Chief Engineer, Crown Z's Central Engineering Office, Seattle, and GUS OSTENSON (right), newly appointed Manager of the Antioch mill, who temporarily is continuing to make his base at Camas, Wash., where he had been Mgr. of Paper Manufacturing. Standing, l to r: R. P. HUTCHINSON, HUGH BYRNE, LUCIEN MONCINI, and HENRY SOLBAKKEN, some of the staff of the C.E. Office working on Antioch plans. Pulp will come from a new Elk Falls, B.C., subsidiary kraft mill.

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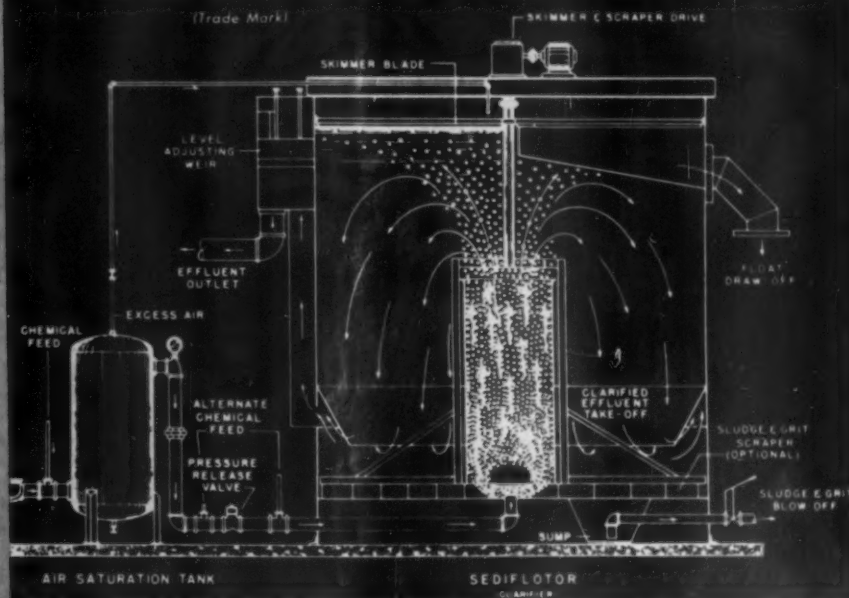


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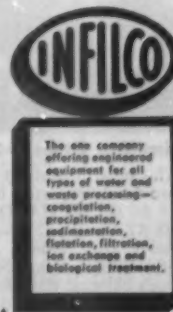


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## New Slant Given at APPA Open Meeting

• A fresh slant on the problem of mill and community relations at the community level was presented as one of the highlights of the recently concluded annual Paper Week sessions of the American Paper & Pulp Association.

In his address prepared for the Open Industry meeting, J. B. Faegre, president of Minnesota & Ontario Paper Co., who has a long background of industrial management and law practice in Minnesota, stressed the need for overall management men gaining a wide knowledge of matters vital to the communities.

These would include industry studies and developments (1) looking toward a sound natural resources program, (2) in fields of technological advances and research, (3) in domestic and world market requirements, (4) in market trends and (5) in governmental activities.

With this kind of a background of depth and wide knowledge and understanding, a management man is in a position to do a better job of community relations. And his company relations with industry generally will benefit. These are matters of great importance in this industry's relations in communities and other industries.

Operations at community levels must not be on an isolationist basis, said Mr. Faegre.

In his prepared address, he sketched the historical evolvement of the pulp and paper industry from lumber operations of the past, which involved a relatively small investment. Now the modern type operation involves extremely large capital investment requiring a permanent status and operation organization. To make this successful, he said, there must be a healthy development of the community.

A new picture of J. B. FAEGRE, President of Minnesota & Ontario Paper Co., at his desk in the Baker Arcade building at Minneapolis. He was a spokesman for paper industry at Paper Week in New York.



The coordination and distribution of information on community relations activities and effective objectives, through the APPA organization, he said, was essential with so much at stake.

Don Leslie, president of Hammermill and APPA president, who reviewed the industry growth and its outlook; J. D. Zellerbach, president of Crown Z, who discussed world affairs, in relations to the industry, and Walter C. Shorter, vice president of Camp Mfg., were others who made reports at the Open Industry meeting.

## Paper Week Guesses New Records in 1955

The favorite guess of Paper Week delegates buttonholed by PULP & PAPER during the Waldorf-Astoria sessions in the last days of February was that next year would see an all-time record production of about 27,000,000 tons of paper and paperboard in the U.S. in 1955. Many thought it would be right close to that figure; others thought it could climb substantially higher.

More coating of paper, especially offset printing papers and box board and all kinds of container board, was widely predicted by those close to that field. Coating is going to be bigger and better, they said. More bleached board will be made.

It was announced that the 1954 production of paper and paperboard

hit 26,656,631 tons. That is the present all-time record, just 1% above 1953. Paper excluding board totaled 11,614,655, up 2%. Board totaled 12,046,923, off 2%, despite a late rally.

Woodpulp hit a record, too—18,341,175 tons made in U.S., 5% up. More semi-chemical pulp and more chlorine dioxide bleaching were the favorite forecasts of Paper Week.

## Harold Cavin Engaged For Japanese Mill Plans

Contrary to published reports elsewhere, no Japanese technical mission has visited Alaska in recent months and none is expected. However, the Alaska Lumber & Pulp Co., the Japanese operating firm incorporated at Juneau, the Alaska capital, by Tokyo Pulp Co., formed in Tokyo in 1953, has engaged Harold D. Cavin as a consulting engineer.

Mr. Cavin, chief engineer in charge of construction of Ketchikan Pulp Co., as he has been for years for Puget Sound Pulp & Timber Co., will make a report to the Japanese on the economic and physical feasibility of a pulp mill in Alaska. He said three sites are being considered: Sawmill Creek and Herring Cove, both on Baranof Island, near Sitka, and Wrangell.

Alaska Lumber & Pulp has already leased an old sawmill at Wrangell, but work on it is going slowly and it will not be sawmilling until possibly 1956.

Three Japanese foresters recently visited Alaska, working on timber cruises with the U. S. Forest Service.

AL&P Co. expects to spend a reported \$45 million on a new mill and plans to use the magnesium oxide process for an annual output of 100,000 tons of dissolving and paper pulp. There have been no concrete developments since the company asked Forest Service for a block of timber last year.

In another projected Alaskan pulp project, Pacific Northern Timber Co., Portland, Ore., has received approval by Forest Service of its plans to construct a sawmill and pulp mill (80 tons daily minimum) at Wrangell, Alaska. The pulp mill is to be operating by 1962.

Georgia-Pacific Plywood Co. continues to play a prominent role in discussions for future pulp development in Alaska. The latest reported move was a review by FS officials of the year-old G-P application for a timber sale near Juneau. While hopes of a newsprint mill have been discussed, again there is no official announcement by FS or G-P on the outcome.



**Smiling Faces—Smooth Start-up**

The smooth start-up of the \$25,000,000 East Texas Pulp & Paper Co., Evadale, Tex., previously reported here, caused the smiles in this picture taken by PULP & PAPER (l to r): RICHARD A. McDONALD, Exec. Committee Chairman of Eastex; ALBERT G. (BUFF) NATWICK, Mill Mgr.; A. A. (LON) NEESE, Asst. Chief Engineer, Beloit Iron Works; A. G. (AL) OLSON, Beloit Sales Engineer, and J. F. (JACK) SCHIPPER, Beloit Staff Engineer. The 216 in. (196 in. trim) Beloit Fourdrinier makes both chlorine dioxide (Mathieson ClO<sub>2</sub> process) bleached market pulp and an extensive line of bleached and semi-bleached kraft specialties and foodboards.

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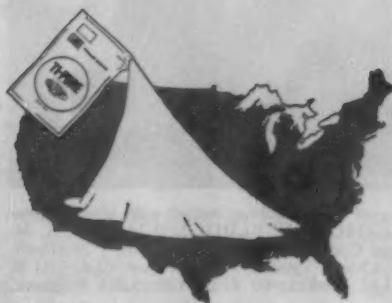
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**Pulp Is Piped Across International Boundary Into This Mill**

Covered by thick frosting of snow, pipe line at side of bridge crosses St. John River carrying pulp from Fraser mill at Ed-

mundston, N.B., to bond paper mill at Madawaska, Me. (seen here across river), where new No. 4 machine is housed.

## Why Fraser Bought a New Machine

Here's the answer — with PULP & PAPER's own pictures and the story about additions at Madawaska

● Almost every mill at some time or other faces the question of whether to buy a new machine or rebuild an old one. Fraser Paper, Ltd. faced this question and finally decided to buy a new machine instead of rebuilding its No. 4 at Madawaska, Maine.

To get the reasons for their decision and pictures and story of the new machine, PULP & PAPER went to Maine's farthest north mill.

Madawaska, Me., is the home of Fraser quality papers, and they are proud of their brand new Pusey & Jones Rapi-Drape 196-in. Fourdrinier. Jack Hierlihy, mill manager, says the latest papermaking equipment, amounting to practically a pushbutton operation, has been used on this machine. Reliance Engineering & Mfg. Co. supplied the sectional multiple generator electronic drive and all of the sectional motors.

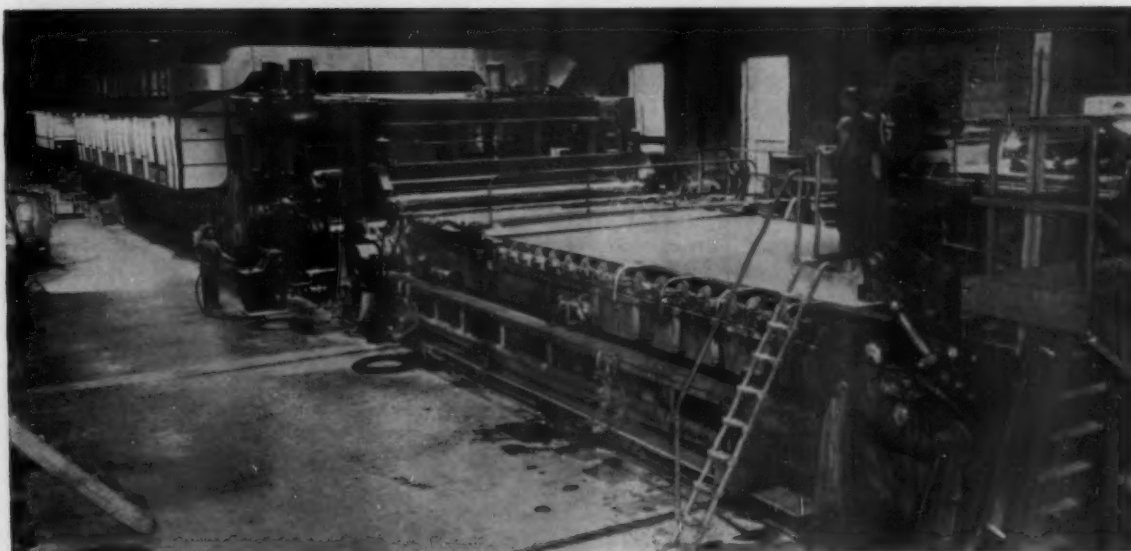
Fraser Paper, Ltd., is a wholly owned subsidiary of Fraser Cos., Ltd., whose executive offices are a good stone's throw across the St. John River in Edmundston, N. B. The parent company also operates three pulp mills in New Brunswick; a sulfite and

paperboard mill at Edmundston, a kraft mill at Newcastle and a sulfite mill at Atholville. They are the largest pulp producers in the Maritime Provinces.

In a unique operation, pulp is pumped through gleaming conduits from the Edmundston mill across the International Bridge to Madawaska paper mill, approximately one mile.



**CHIEF RESPONSIBILITY** for installation of new machine rested with these Fraser and Pusey & Jones men (l to r): J. W. D. (JACK) HIERLIHY, Mill Manager, S. M. BRATTON, Chief Engineer, Pusey & Jones Corp., AUBREY CRABTREE, President, Fraser Cos., Ltd., DONALD A. FORBES, Chief Engineer, Fraser Paper, Ltd., JIM S. REED, Supt., Bond Mill, Fraser Paper, Ltd., and S. G. BRISCOE, Sales Engineer, Pusey & Jones Corp.



#### New No. 4 Machine at Fraser Paper's Madawaska Mill

When it was decided to buy a new machine instead of rebuild the old one, Fraser put in this Pusey & Jones Rapi-drape Fourdrinier, 196 in. wide, driven by Reliance sectional multiple

generator electronic 1800 hp drive. J. O. Ross furnished hood air system on dryers and Ross aisle ventilation system with steel economizers.

At Madawaska, four Fourdriniers turn out about 300 tons of bond and converting papers daily. In the groundwood specialty mill, two machines make about 160 tons daily. Then, there is also the coating machine, which has earned the paper industry's respect for Fraser's Fracote, and is supplied from paper machines.

In a re-appraisal of increased production potentials, mill management turned to No. 4, installed in 1928, three years after mill start-up. It was originally designed for tissue, but as Fraser never made this grade, it didn't fit into their plans effectively.

In evaluating this machine, Fraser management and engineers considered these factors. Machine trim wasn't good and they needed a wider trim for the coater. The Fourdrinier and dryers would have to come out. Jack Overbagh, former assistant mill manager, and recently promoted to assistant chief engineer, Fraser Cos., Ltd., says that the more they got into it, the more they saw that they had to have a new machine.

Present operating speed of the new machine is about 1,100 fpm. It is designed for 400 to 2,000 fpm and Mr. Overbagh says that their thinking was to put plenty of reserve into it. It has a wide range of products. The old Fourdrinier was dismantled and sold to a mill in Canada.

**STOCK PREPARATION IS NEW-** Stock preparation for the new machine is all new. Stebbins Engineering & Mfg. Co. installed a new tile beater dump chest and machine chest

with Shartle Bros. propeller agitators. Also added are four Morden Stock-Makers and a DeZurik consistency regulator. Just ahead of the four Bird 2A screens are 18 Bauer Cleaners (formerly known as Centeri Cleaners). The flow from these is automatically controlled from the level of stock in the screens by two 12,000 gpm Goulds fan pumps. All stock and white water piping is stainless steel or copper.

The Beloit air-cushioned pressure headbox has stainless steel lining.

The Pusey & Jones Rapi-Drape Fourdrinier is all stainless steel clad. The entire machine from wet to dry end is equipped with anti-friction

bearings and enclosed gears. Table rolls are by Tyer Rubber, and Manhattan Rubber Co. covered the 24-in. lump breaker roll. The Fourdrinier is equipped with air-loaded cylinders and oscillating suction boxes. It has dual breast roll arrangement, Micarta tipped forming board and deflectors. All parts in contact with stock are sheathed in stainless steel. Wire return rolls are stainless steel.

The 44-in. Downington suction couch roll is driven by a Reliance 300 hp motor. It has a 6 to 10 in. adjustable suction box with an 18by45 and 16by32 Roots Connerville compound vacuum pump with capa-



**SMILING QUARTET RELAXES** after successful startup of new machine. (l to r) EDWARD SULLIVAN, General Supervisor, Consolidated Constructors, Inc., who directed dismantling of old machine and installation of new one. MALCOLM (PERK) PERKINS, Electrical Engineer, Fraser Paper, Ltd., JACK S. OVERBAGH, former A-st. Mill mgr., recently promoted to Asst. Chief Engineer, Fraser Cos., Ltd., and BILL WENDELL, Plant Engineer, Fraser Paper, Ltd.

city at 8080 cfm at 18 in. vacuum, driven by an Elliott 300 hp outdoor splashproof directly connected motor.

**UNUSUAL PRESS SECTION**—An unusual feature of the press section are the two Downingtown rubber-covered suction press rolls; a 36-in. dia. roll on the first press with a 4-in. suction box, and a 34-in. dia. roll with a 4 to 8 in. adjustable box on the second press. They are connected to

two Nash H-11 pumps and both presses are driven by 125 hp motors.

The press section is arranged for eventual suction pickup arrangement. Air press loading is on the top section of press roll. Felt suction boxes and Vickery felt conditioners are connected to a Nash L-9 pump.

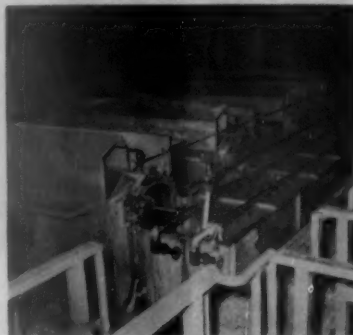
**THE DRY END OF MACHINE**—Pre-dryers consist of 23 paper dryers and 8 felt dryers, all 5-ft. dia. and one

transfer dryer 3-ft. in dia. They are built for 75 lbs. steam and are driven by two 200 hp motors. All bottom dryers are equipped with Pusey & Jones doctors. Automatic felt stretchers are motor driven.

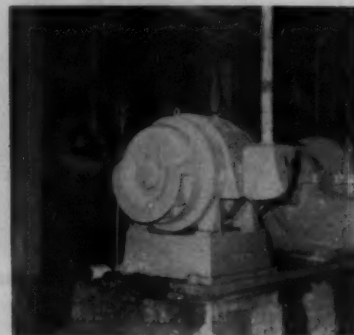
The 12-ft. dia. Yankee dryer is driven by a 150 hp motor. Two 24-in. dia. pressure rolls with 125 hp Reliance motors are used and this dryer can be bypassed if desired. It is equipped with a 7% hp speed drive



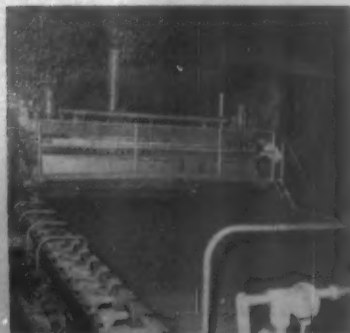
**STOCK PREPARATION** for new machine is all new. Here is battery of four Morden Stock-Makers through which stock passes before going on to Bird screens.



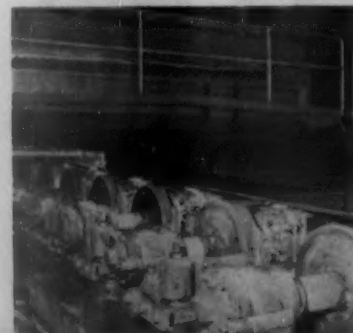
**STOCK PASSES** to these four Bird 2A screens just head of Beloit air-cushioned pressure headbox after it has gone through 18 Bauer Cleaners (formerly called Centri-Cleaners).



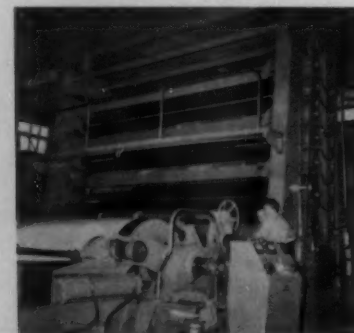
**TWO GOULDS** fan pumps, with 40 ft. head each, automatically control flow from Bird 2A screens and 18 Bauer Cleaners. Each pump has air-operated valves.



**BELOIT AIR-CUSHIONED** pressure headbox has stainless steel lining. Fourdrinier has air loaded cylinders and oscillating suction boxes. All parts in contact with stock are sheathed in stainless steel.



**TABLE ROLLS** are rubber covered by Manhattan Rubber Fourdrinier section features dual breast roll arrangement, Micarta tipped forming board and defectors.



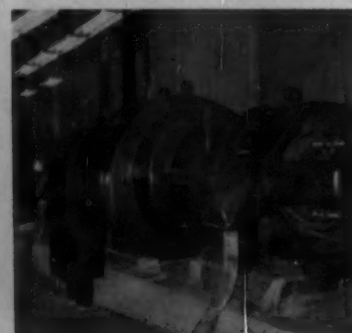
**LOBDELL-UNITED** ball-bearing calender stack has eight rolls in steel framing. Calender stack framing is by Pusey & Jones. All rolls have Lodging oscillating doctors.



**UNUSUAL FEATURE** of press section are two Downingtown rubber covered suction press rolls; a 36-in. dia. roll on first press with 4 in. suction box and 34 in. dia. roll with 4 to 8 in. box on second.



**AUXILIARY CONTROLS**, main drive and hydraulic controls are unitized in control consoles, such as this one located at size press and Yankee dryer. Paul Morrow Co. fabricated control consoles.



**ENTIRE MACHINE** is driven by Reliance sectional multiple generator electronic 1800 hp drive with Falk reducers.



## What's *new* about Huyck felts?

### CHAPTER I: MOVING DAY

You know the emptiness you'd feel seeing an old friend leave your neighborhood. We felt that way, too, the day we moved our entire Kenwood blanket operation to Cavendish, Vt.

Trouble was, we had no alternative. Space was needed for increasing production capacity to meet the growing demands of papermakers for new Huyck felts—and for additional equipment now being used in the development of new techniques in felt making.

Also, we knew that many advantages would accrue to papermakers—and to us—by going all-out for specialization in manufacture . . . devoting all of our facilities and know-how to making felts, and felts alone, at Rensselaer, N. Y.

...

*This is but a part of the continuing story of what Huyck is doing to help you produce better paper at lower felt cost per ton.*



Just released—Huyck Felt Bulletin (Vol. II, No. 7)—Factors Influencing Water Removal in a Plain Press. Write for your copy today.

**NEW!**  
**HUYCK FELTS**  
FIRST IN QUALITY... FIRST IN SERVICE

F. C. HUYCK & SONS • Rensselaer, New York  
Established 1870



for continuous revolving during Sundays and holidays.

The size press has a 30-in. dia. U.S. Rubber covered bottom roll and a 28-in. pneumatically loaded brass top roll. It is followed by a steam heated 24-in. size set roll and a Mt. Hope expander roll. The size press can also be by-passed. A 100 hp motor drives this section.

After-dryers consist of 8 dryers, 5-ft. dia., driven by a Reliance 125 hp motor. Dryers are designed for 125 lbs. pressure.

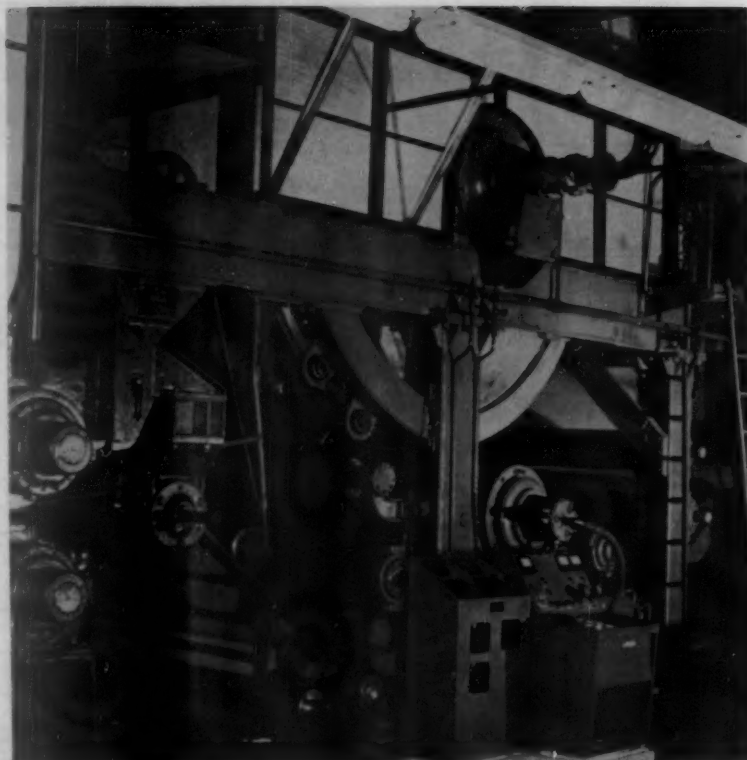
The Lobdell-United ball bearing calender stack has 8 rolls in steel frames. The anti-deflection king roll is 36 in. dia. and may permit a great range of finishes with minimum stock manipulation. Queen roll is 20 in. dia. and 6 intermediate rolls are 16 in. dia. Calender stack framing is by Fusey & Jones. All rolls are equipped with Lodding Engineering oscillating doctors, driven by 200 hp motor.

Calenders are cooled by a J. O. Ross Engineering cooling system, with a centrifugal compressor connected to a 40 hp motor, cooling coil and 34 manually operated control nozzles.

The Fusey & Jones Pope-type reel with horizontal track is driven by a Reliance 75 hp motor. It is air loaded with mandrel accelerator. The reel drum is water cooled. The Cameron Type No. 19 winder has an hydraulically operated roll lowering table for removing rolls from the winder.

#### DESCRIPTION OF AUXILIARIES—

J. O. Ross Engineering Corp. furnished the dryer hood and air system and a Ross aisle ventilation system with stainless steel economizers. Fluorescent lighting is on the dryer hoods. The Yankee dryer has an exhaust fan, economizer and supply fan for the vapor absorption system.



**VERSATILITY** of new Fusey & Jones machine enables Fraser to make machine-finish or machine glazed paper. Latter is made possible through this 12 ft. dia. Yankee dryer equipped with Sunday drive. Size press is to left of Yankee.

The Midwest-Fulton dryer drainage system supplies 25 lb. extraction steam to pre-dryers, 125 lb. to Yankee, and from 25 to 125 lb. to after dryers. There is automatic lubrication of dryers and calenders, with 4,500 gal. capacity oil system.

The entire machine's Reliance sectional multiple generator electronic drive is 1800 hp with Falk reducers. Auxiliary controls and main drive and

hydraulic controls are "unitized" in control consoles by Paul Morrow Co.

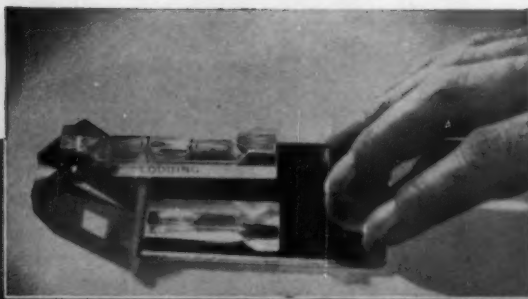
Aubrey Crabtree, Fraser's president, says that this new machine will produce quality paper totaling 10,000 tons a year more.

This multi-million dollar improvement in the Madawaska mill is the latest in a series of postwar improvements at all Fraser mills, which to date totaled a \$33,000,000 investment.

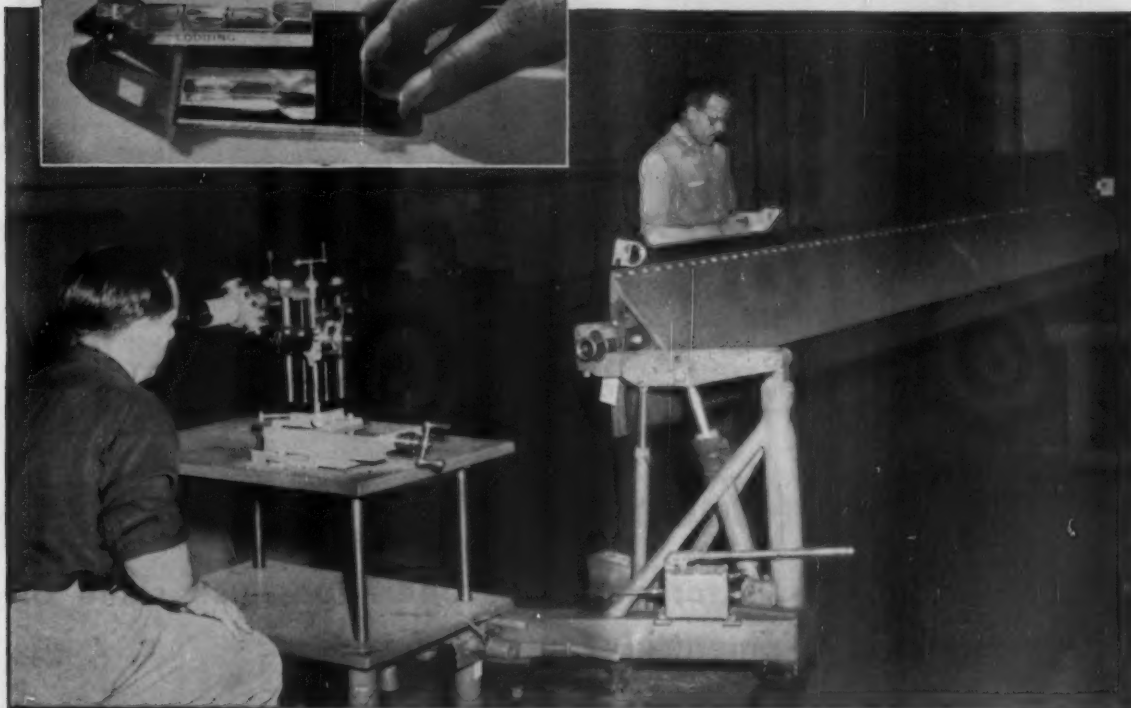


#### No Nationality Has Monopoly on Research

Research brings them together for common interests, and especially is this so in Free America. Five nationalities are represented here—all working on research at Marathon Corp., Rothschild, Wis. (l to r): YAO CHIANG, China; J. RICHTER SALVESON (Marathon's Director of Central Research), Norway; BRIGITTA ABRAHAMSON, Sweden; GUNTHER NAKEL, Austria, and ARVO KAUTOLA, Finland. Incidentally, the mural behind them graces the entrance to Marathon's Research Building and was reproduced in 4 colors on the 1950 cover of PULP & PAPER'S WORLD REVIEW NUMBER. It depicts papermaking from tree to end products, was painted by Mrs. Hazel Stoick Stoeckeler of Rhinelander, Wis.



# LODDING



In your plant and in ours, every known test is made to make certain your Doctor works to Lodding efficiency. In our plant—optical check for straightness with Doctor in working position is one of many made here. In the field—special level (top) on your machine insures perfect alignment. These are among the steps taken by Lodding to make your Lodding Doctor go to work for you, ready for the kind of action your production requires.

**LODDING ENGINEERING CORPORATION**  
WORCESTER, MASSACHUSETTS



THE DE MEDICI PULP MILL

View of the pulp mill shows (left to right) rotary screens, decker, unbleached storage chest, bleaching chest, the two rotary di-

gesters in background, and wet machine. High along the wall is the riffler. In the foreground is a load of semi-chemical pulp.

## Making Semi-chemical Pulp in Italy

American visitor describes operations—use some of same equipment in straw pulp process

■ The technical director of a major United States producer of quality paper, using hardwood semi-chemical for part of its furnish, told PULP & PAPER, on return from a trip to Europe, that technically the Italian industry is far advanced in its knowledge of pulping hardwoods. This is the story of one Italian mill using hardwoods.

Cartiere L. de Medici, at Cirie near Turin, in Northern Italy, operates the only bleached semi-chemical pulp mill in Italy, making 5 to 6 tons of pulp per 24 hours and is capable of producing 10 tons. The same pulp system also produces bleached straw pulp. The mill was designed by V. Debin, a Cirie, Italy, consulting engineer experienced in semi-chemical pulp mill design, under the direction of Comm. Giovanni Gherardi, the mill manager.

An American equipment supplier, visiting this mill, described its operation and engineering design, as "clean and neat."

Many species of wood are used, but about 80% is poplar or aspen waste from sawmills and veneer mills. The wood is stored under 10 open concrete sheds. Workmen load an underground conveyor which brings it to a chipper, with a driven ribbed feeding roll attachment designed for



COMM. GIOVANNI GHERARDI (left), Gen. Mgr., Cartiere L. de Medici, directed semi-chemical pulp mill development as part of a modernization plan. V. DEBIN (right), Consulting Engineer, designed and constructed the bleaching semi-chemical and bleached straw pulp systems at the de Medici mill.

veneer waste and small dimension wood. Chips are blown to a cyclone which drops them to a shaker screen. Accepted chips are blown directly into the digesters.

The two welded 10 ft.-8 in. diameter insulated rotary digesters are designed for 150 lbs. working pressure. Chips are cooked by the neutral sulfite process using 10% sodium sulfite and 3.44% sodium carbonate on the O.D. wood basis. The cooking cycle is one hour to 170° C. and four hours at 170° C. Filling and dumping require two hours. After cooking, chips are dumped into a pit under the digesters.

**HOW PULP IS REFINED AND BLEACHED**—Preliminary fiberizing takes place in a hammermill at a consistency of 12% O.D. The coarse fiber passes to an agitated chest where it is diluted to 6 to 7% consistency. An open runner centrifugal pump brings fiber to two German-made Eirich disc mills but these were being replaced by a Sprout-Waldron refiner to improve refined pulp quality, increase production, and give more flexibility to the system.

The refined pulp is washed on vacuum washers, riffler, and screened in two rotary screens having .035 in. holes, driven by 12 hp motors. The pulp flows by gravity through the riffler, screens, and thickener. The latter is a 49 in. diameter by 79 in. face decker covered with stainless steel wire cloth.

The semi-chemical pulp is bleached batchwise in a Bellmer type tile-lined concrete bleaching chest of 1600 cu. ft. capacity. Liquid chlorine from steel cylinders is added near the hard rubber covered propeller agitator to insure rapid mixing. About 14% chlorine is added. After chlorination, pulp is washed in the chest using a washing cylinder and then alkalinized with 29% caustic soda. Next, chlorine and lime are added. About 2.4% chlorine is used as hypochlorite giving a total

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NIBROC TOILET TISSUE • BERMICO SEWER PIPE & CONDUIT • ONCO INSOLES • CHEMICALS**

chlorine consumption of 16.4% on the unbleached pulp basis. The pulp is washed again with the washing cylinder after bleaching. Future plans include a three stage bleach plant.

Bleached pulp passes to a tile lined storage chest. The pulp is lapped because the board mill makes many grades and the semi-chemical pulp usage varies with the grade.

Strength Properties— Bleached Semi-chemical Pulp		
	@ 46° S-R (250 cc Can. Std.)	@ 36° S-R (350 cc Can. Std.)
Burst Factor	72	62
Double Fold	2365	1800
Tear, gr.	—	58.2
Break length, meters	9500	7000

Basis: 48.6# — 24 x 36 — 500

**HOW PULP IS USED**—Bleached and unbleached semi-chemical pulp is used by Cartiere de Medici in the furnish for their duplex and triplex Four-draier board machines producing high quality bleached paperboard. Bleached semi-chemical pulp partly replaces softwood soda pulp in many of their grades, giving good formation, good machine operation, and at the same time reducing furnish cost; 30% bleached poplar semi-chemical pulp with 70% soda pulp produces excellent paperboard without reduction in strength properties over 100% soda pulp furnish. The semi-chemical pulp gives an improved surface for coating.

The pulp is, in some cases, jordaned ahead of the machines to obtain the desired machine freeness.

There is an ever increasing interest in hardwood semi-chemical pulp production by paper mills in Italy. The shortage of pulpwood compels mills to seek a higher pulp yield to conserve wood and to reduce manufacturing costs but without sacrificing quality. The de Medici semi-chemical mill is an excellent answer to these demands.

**BLEACHED STRAW PULP SYSTEM**—Wheat straw is prepared by a separate process but using most of the same equipment at the de Medici mill. From the straw storage shed the baled straw is conveyed to a heavy cutter which reduces it to  $\frac{1}{2}$  to 1 $\frac{1}{2}$  in. lengths. A series of cleaning steps removes nodes, grain, and debris. Straw cutting and cleaning gives several advantages:

1. More uniformly cooked pulp.
2. Cooking time and dumping time reduced.
3. Cleaner pulp is produced.
4. The pulp can be conveyed by centrifugal pumps rather than by mechanical conveyors.

The cut straw is cooked in the same globe rotary digesters used for



**THE MILL, VIEWED FROM OTHER END**

View from other end of the semi-chemical pulp mill showing (left to right) wet machine, screens, decker, storage chest, and washing cylinder on bleaching chest. In right foreground is cooked straw in digester pit.

semi-chemical pulp using 10% sodium sulfite and 2.1% sodium hydroxide on the dry weight basis. Water-straw ratio: 2.4 to 1. Cooking pressure: 105 lbs. (168° C.). Cooking time: 3 hours for unbleached pulp, 4 hours for bleachable pulp. The digesters are blown at a reduced pressure of about 45 lbs. through an 8 in. stainless steel blow valve to a diffuser chest under the digester. The cooked straw is fiberized in the refiner described under semi-chemical pulping. Following the refiner it is lightly jordaned, washed, and bleached in the system described under semi-chemical pulp. In bleaching, the straw is treated with 1.8% chlorine in the chlorination stage and 5.2% chlorine in the hypochlorite stage; the latter being in two steps for better control. The yield is 42% on the O.D. straw basis. Production is about 6 to 7 tons per 24 hours. The following are properties of the bleached straw pulp:

Physical Properties— Bleached Straw Pulp	
At 50° S-R Freeness (220 cc Can. Std.)	
Burst Factor	40
Double Fold	200
Tear, Gr.	51
Break Length, Meters	6500
Brightness	85-86

**HOW STRAW PULP IS USED**—The pulp is well liked because it hydrates easily, produces an excellent formation, and improves the surface sizing. It is used in both filler and liner but mostly in the liner of high grade bleached paperboard.

Since the price of straw has risen considerably, wood semi-chemical pulp production is more attractive at this time, but the mill is versatile; it can use whichever raw material is most economical at the moment.

### New President For Michigan Paper

L. D. Nicolson is new president of Michigan Paper Co., division at Plainwell, Mich., of W. C. Hamilton & Sons, succeeding Allan Milham, who will retire in June. Mr. Milham, of pioneer Kalamazoo papermaking family, was for years president of the former Bryant Paper Co., also. He has a Kalamazoo Valley farm.

Mr. Nicholson was manager of National Vulcanized Fibre's Leicester-shire Div., Binghamton, N. Y.

### George W. Mead Gives Beloit College Gift

George W. Mead, retired former president of Consolidated Water Power & Paper Co., now headed by his son, Stanton, has come to the rescue of the chapel at Beloit College, Beloit, Wis., which has turned out many graduates active in this industry.

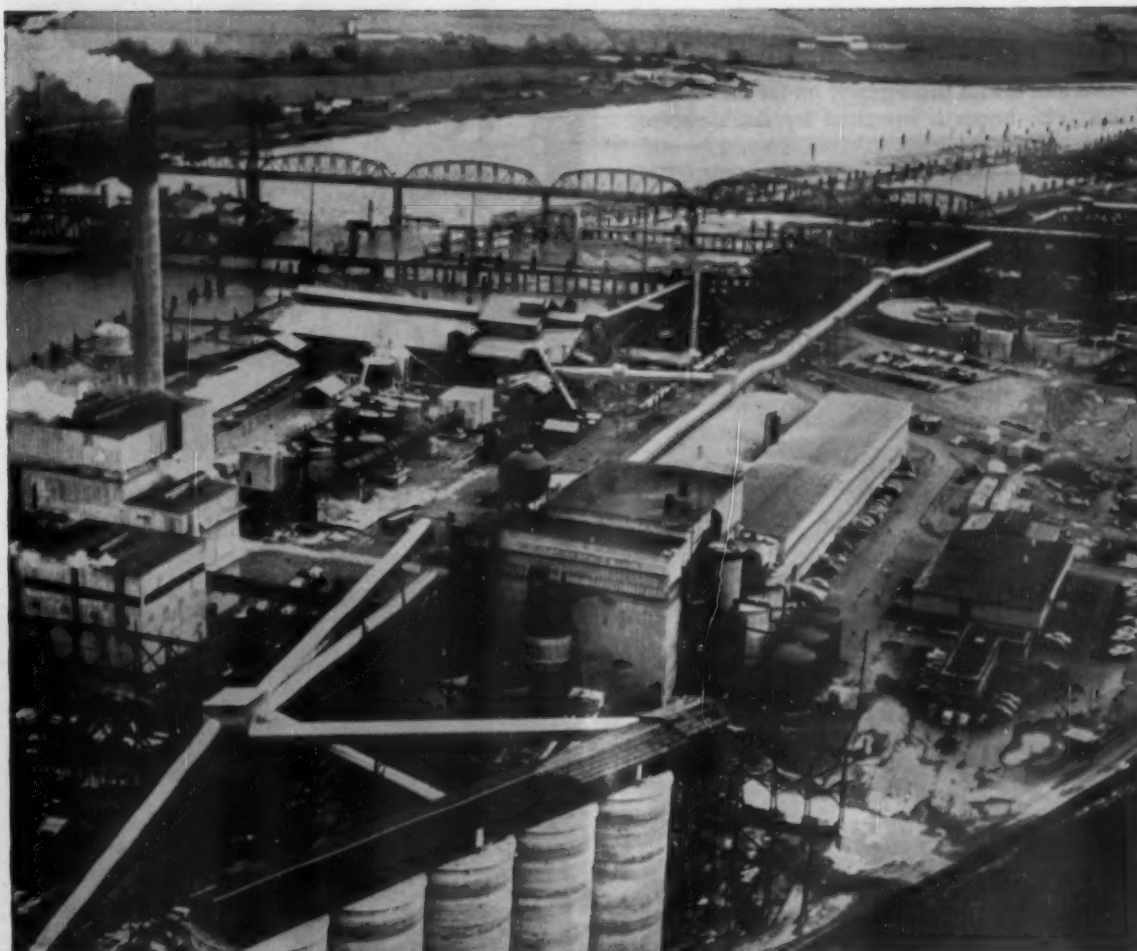
He is contributing the full cost of a new and much larger organ for the chapel, which was destroyed in a fire Dec. 12, 1953. A new chapel already has been built and dedicated.

Mr. Mead, class of 1892, is contributing a \$40,000 three-manual organ, with 2,659 pipes.

### Boyer in Mexico City

Albert S. Boyer, former supt. with A & P Corrugated Box Corp., Lawrence, Mass., is new supt. of the Sonoco de Mexico paperboard mill in Mexico City.

Also in Mexico City is Mitchell Thom, former Victoria, B.C., mill supt., now manager of United Shoe & Leather's paperboard mill there.



## Hungry paper mill fed by longest conveyor belt system of its kind... *all U. S. Rubber belts*

In keeping with its progressive management, this paper mill\* located in the State of Washington and one of the world's largest, has consistently modernized and cut operating costs. Latest advancement is this great conveyor belt system which carries 250 tons of wood chips per hour.

This belt system, traveling one and a quarter miles—(the longest ever installed in a paper mill) utilizes two and a half miles of 36" wide U. S. Giant® Conveyor Belting specifically designed for operation over 45-degree troughing idlers. The belting was designed, and built, by United States Rubber Company through *Three-Way-Engineering*—in which "U. S." engineers work hand in hand with engineers representing the mill officials and those representing the designers of the conveyor equipment. This mammoth belt system

loops under the Pacific Coast's main highway (No. 99) and over three transcontinental railroad lines. Its savings in time and money are almost impossible to calculate.

This paper mill also uses many other "U. S." products to deliver economy and efficiency in its manufacturing process. These include V-belts, expansion joints, pinch valves, rubber mountings, plastic pipes, hose and matting. Everywhere you go in industrial America, you will find "U. S." serving the manufacturer. 27 District Sales Offices are strategically located—each staffed with engineers ready at all times to help you. Or write to address below.

\*Owned by Weyerhaeuser Timber Co.



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**UNITED STATES RUBBER COMPANY**  
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

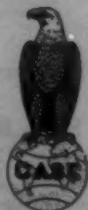
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes  
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

Here's a Loader Crane that hoists its hinged boom to 24-foot height, lifts logs high and clear of trucks, and lowers them gently on far side of gondolas. The boom is operated by double-acting ram with maximum capacity of 15,000 pounds at 12-foot reach. Built by the Harrison Mfg. Co., Columbia, S. C., on the "520" Case Diesel Tractor, it has the flotation of 18.00 x 26 tires to work wherever a truck can go . . . power steering for fast maneuvering, even in soft footing. Counterweight at rear gives good balance and great stability. Handling is easy . . . work goes fast . . . with the smooth-running 65 horsepower of the Case Diesel Tractor.

## New Power Speed and Reach for Handling Pulpwood



The Case "520" Tractor with "Powrcel" controlled combustion starts at touch of a button directly on diesel fuel . . . burns it clean all the way from purring idle to full load. Six-cylinder engine has seven main bearings . . . fully machined wet sleeves . . . by-pass cooling system with water gallery . . . cylinder heads in pairs for easy handling and more certain sealing . . . single plunger injection pump. J. I. Case Co., Racine, Wis.



# CASE

"520" DIESEL



**AT TREE IMPROVEMENT CONFERENCE** (l to r): PHIL C. WAKELEY, i/c forest genetics program, Southern Forest Experiment Station, New Orleans; D. A. ANDERSON, i/c joint program industry, Texas Forest Service; GEORGE I. GARIN,



Auburn University. In group at right, S. V. SIHVONEN, Woodlands Mgr., The Crossett Co.; A. W. BENTLEY, Bowaters Southern Paper Corp.; J. C. McCAFFREY, Vice Pres., International Paper Co.; K. A. SWENNING, Scott Paper H&W Div.

## How to Grow Superior Trees

Southern Tree Improvement Conference draws many leaders to New Orleans for new information on genetics

• A Southern Tree Improvement Conference held in New Orleans in January revealed a promise that in the foreseeable years to come not only Southern Pine but all forests on the continent will be guided into production of most desirable trees—straight, well formed with good branching habits, well textured, and fast growing with disease and drouth resisting qualities.

At New Orleans were federal, state and private industry experts, top executives of the pulp and paper industry, and representatives of Southern Pine Association membership's 10 million acres of managed forests.

This is an epoch in Southern forestry in which funds in substantial amounts are being expended to establish a forest equal to or superior to the original virgin stands. A Southwide search has been made to locate superior trees. Seeds from these trees are being subjected to nursery growing to determine if there is a "better strain."

In the Southeastern naval stores area, ability of selected high yield trees to produce similar profitable units is well on the way to establishment and as converse proposition there has been some indication that the crooked or forked tree produces a similarly defective progeny.

West Virginia Pulp & Paper Co. has been obtaining its seed from selected trees in specified areas. Of course, this reversion to selected seed source is

only in infancy because industrial seedling planting programs at present are so tremendous that seed from any source is required.

**STARTED IN 1950-51**—Formed in 1950-51, the Committee on Southern Tree Improvement held its second session in 1953 and much has been accomplished since then. Dr. Clemens M. Kaufman, U. of Florida forestry school director, is current chairman. The program was developed by D. A. Anderson, Texas Forest Service; George I. Garin, Auburn University, and Phil C. Wakeley, Southern Forest Experiment Station. Moderators included: E. L. Demmon, director, Southeastern Forest Experiment Station, Asheville, N. C., and president, Society of American Foresters; Dr. A. D. Folweiler, director, Texas Forest Service; and Dr. Scott S. Pauley, Cabot Foundation, Harvard University. There were 115 registered.

Importance of determining what tree characteristics are so rigidly controlled by genetics that they cannot be altered was emphasized by Dr. Pauley.

Geographic races provide the framework within which tree selection and breeding must be done. Paul Rudolf, Lake States Forest Experiment Station, said. Primary object of forest tree improvement is to develop trees which combine large size, relatively rapid growth, desirable form and branching habit, and good qual-



**MODERATOR** for opening session was E. L. DEMMON (left), Director, Southeastern Forest Experiment Station, Asheville; VERTREES YOUNG (right), Exec. Vice Pres., Gaylord Container Corp., was among industry officials at Southern meeting.

ity wood. Unless such trees are hardy in the locality in which they are grown, however, possession of these valuable characters will be of little importance.

Though hampered by drouth, the Southwide seed source study launched in 1951 has been encouraging in that differences have shown up inside of three years, said Phil Wakeley. Useful mapping is assured for longleaf and slash and though drouth makes results for loblolly and shortleaf pine not comparable, much information was obtained. The study was instituted to permit mapping for loblolly, slash longleaf and shortleaf pines to establish zones within which seeds may be moved freely from collecting ground to planting sites; also boundaries across which seed probably or definitely should not be moved.

## PULPWOOD SECTION

### HOW CROSSETT IMPROVES TREES

Improvement cutting in the Crossett forest originated in 1934 along with a policy of leaving only good trees for seed source. This has resulted in an improved quality of stand, said S. V. Sihvonen, manager of Crossett Co.'s forestry division, Crossett, Ark. Now underway are studies to determine how good Crossett seed is within a reasonable distance (110 miles) for four major pines, with loblolly first. Also to locate seed source provenances satisfactory in the Crossett area. The object is to be able to certify Crossett seed as superior to local seed within a carefully defined area. Crossett seed has been sent to 20 persons representing 12 organizations in five states.

General discussion revealed that the South has largely discontinued indiscriminate use of seed sources, going substantially into local sources.

Restriction of plantings of loblolly pine to within its natural range and non-use of seed from outside areas is recommended resulting from tests conducted by TVA, according to E. G. Wieschuegel, Forestry Investigations Branch Chief.

Results comparing outside sources with local seed in the Bogalusa, La., plantation of Gaylord Container Corp. were given by T. E. Bercaw. Seed was collected in 1925 from Louisiana, Texas, Georgia and Arkansas; planted in the Bogalusa nursery; set out in 8-ft. rows in 1928. In two half-acre test blocks seedlings were set out in alternating state rows. In 1948 thinning was effected by arbitrarily taking odd numbered trees in one row; even numbers in the adjoining. A second pulpwood thinning was effected in 1954.

Lack of uniformity among tree species of generally common characteristics is easily noticeable, said Keith W. Dorman, Southeastern Forest Experiment Station. Variation within the tree species makes possible selection and isolation of outstanding individu-

	LA.	TEXAS	GA.	ARK.
Av. total height	59'-1"	50'-5"	49'-6"	42'-1"
Dia. increment 1948-1954	1.4"	1.0"	1.5"	0.5"
Av. dia. (DBH)	8.1"	6.2"	6.7"	5.2"
Av. pulpwood per tree (cords)	.104	.038	.055	.019
Present vol. per acre (cords)	32.2	11.3	15.3	5.7
Present vol. plus 1922 cut (cords)	50.7	22.6	23.2	12.7

als or races. Leaving of well formed seed trees and collecting seed from trees of good form should result in more uniform and good stands.

Presence of drouth hardy pine strains can hardly be doubted as a result of tests initiated by Texas Forest Service with loblolly from "lost islands" of these trees in dry areas, according to Bruce Zobel. Located 120 miles west of the East Texas pine region, the area has a rainfall of 25 to 45 in. annually (in heavy showers), high temperatures, poor and rocky soil. Replanted in six areas from sites ranging from moist to dry, those seeds from the "dry" parts had seedlings that sustained the drouth years best. Studies are continuing.

Synthesis in breeding is thought analogous to that in chemistry, entailing application of principles through appropriate techniques and procedures, according to F. I. Righter, Institute of Forest Genetics, Placerville, Calif. It is possible to obtain hybrids in which genes of three or more species are represented. They have passed parental species in growth.

Actual costs of gathering seeds from selected trees set aside in an area were given by L. T. Easley, West Virginia Pulp & Paper Co. This operation was in the Westvaco Experimental Forest. The Forest now has 55 acres of loblolly pine seed production area containing 608 trees as well as 18 acres of slash pine seed production area containing 520 trees. The company's Southern Woodlands Dept. has 37 acres of loblolly pine seed production area containing 494 trees. This is a total for company of 92 acres of loblolly pine and 36 acres of slash pine aggregating 2,142 selected seed production trees. They plan to add another 100 acres this winter.

From 1956 on West Virginia expects to furnish from selected parent

trees all the seed for our loblolly pine planting stock. This is a feasible and financially sound program, he said.

### "Match Stick" Wood Is Basis of 4 New Mills

Using his own firm as an example, Harold S. Foley, president of Powell River Co., told members of the Truck Logger's Association at their annual convention in Vancouver, B. C., that the use of what he termed "match stick" logs and waste woods had brought about a complete change in the industry. At his own mills, said Mr. Foley, it had almost caused a revolution.

Ten years ago small logs were considered a nuisance, but today, with the installation of chippers and barkers, even in the smallest of operations, the use or sale of these items were the means by which many small mills kept in the black.

Mr. Foley pointed out that since the advent of the salvage of the former waste materials, four new pulp and paper mills had sprung up in B. C.

### Worst Fire in South Georgia

The worst forest fire in South Georgia since organized fire protection was started many years ago, recently laid waste to 54,860 acres of timberland. It swept 11,000 acres of Union Bag's Okefenokee Forest and other Charlton county timber. It was driven out of Okefenokee Swamp by a fierce wind, and sometimes raced faster than a man could run.

It took two days and 14 state and private fire suppression units, each with plow, tractor, truck and crew, to stop it.

### A New Oliver Tractor

Now on the market is a totally new tractor, the Oliver Super 99 GM Diesel, said to be the most powerful general purpose tractor on wheels.

This new Super 99 GM Diesel becomes the power leader of the Oliver industrial wheel tractor fleet. According to corrected ratings observed during manufacturer's tests, it develops 72 hp on the drawbar, 80 hp on the belt.

The new Oliver tractor is powered by an engine vastly different in principle than those in wheel tractors, a 2-cycle General Motors 100% Diesel.



ON HAND from St. Regis Paper Co. were (l to r) PAUL M. DUNN, A. B. RECK-NAGEL and GEORGE W. ABEL.



**REX**

**Z-METAL CHAINS**

**"LASTED 3 TIMES LONGER"**



Here's a typical example of the way you can cut costs... get better service with Rex Z-Metal Chains in your mill.

On this transfer conveyor, standard malleable chains needed replacement every 15 months. It was replaced by a Rex Z-Metal Chain. Z-Metal operated for more than four years before it needed replacement.

This isn't the unusual story. It's typical of the ability of Rex Z-Metal Chains to withstand the pounding of logs... the heavy loads... the abrasive sliding service. Many mills have had even more success with these rugged, long-lasting chains.

Rex Z-Metal Chains are available in all styles used in the forest products industry... fit over the same sprockets as standard malleable chain. Why not get the complete story on how you can get more for your chain dollar? See your CHAIN Belt Man or Distributor, or write for your copy of Bulletin No. 53-56. CHAIN Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.

**CHAIN BELT COMPANY**

District Sales Offices and Distributors in all principal cities

## PULPWOOD SECTION



### Communication Is Big Problem

The flume system is a half mile around and quarter mile across. These PULP & PAPER photos show how the problem is met.

(Left) Each of the 6 cranes is equipped with mobile radio for communication with the woodyard control tower. G. D. LEE, Assistant Woodyard Supt., demonstrates.

(Center) Two gasoline "scooters" are supplied for woodyard

travel, and this is JOHN R. FIELDING, Chief Construction Engineer, making a round of inspection.

(Right) Control tower operator can phone 14 different points in woodyard and woodroom, can talk by mobile radio to the 6 crane operators, or can use siren signal to communicate with men working in box cars.

## Big Problem Here is Communication

Materials Handling — softwoods and hardwoods — is another for Union Bag in world's biggest woodyard

● Down at the wood end of the world's largest integrated pulp and paper mill (in one location) they will tell you that the biggest problem of all in achieving a 2000-ton daily production of pulp is procurement and handling of the wood supply to feed the digesters. That they are able to do this at Union Bag & Paper Co., Savannah, Ga., is tribute to the men who built the world's largest woodpile, and to their planning in handling 3000 daily cords as a routine affair.

Materials handling is but one of the problems of organization. Fully as interesting and important is that of communication, where it is necessary, as in war, to get messages quickly across great distances in order to coordinate far-flung operations. For those who think this an exaggeration, picture a woodyard over a quarter-mile across and a half-mile long, and extending close to a mile from the barge-unloading docks to the gate

where pulpwood trucks enter the yard.

Also picture an operation requiring live storage of approximately 100,000 cords of pulpwood (just one month's supply!), with wood coming in by truck, rail and barge from a procurement area of about 300 miles.

### NOT ONE—BUT 12 WOODYARDS

—To help maintain a steady supply of pulpwood for the six big machines at the Savannah plant, Union Bag is served by a network of dealer-operated woodyards. There are 14 of these in Georgia and one in South Carolina. These yards have several acres of storage space, and have mechanical facilities for unloading the wood from trucks direct to rail cars or for stockpiling and storage.

The yards are located on main railroad lines, and receive wood from farmers and landowners in their areas. Wood is measured in some places by

weight and in some by volume, and payment by the dealer is made on the spot. When rail cars are available, the pulpwood is loaded directly from the trucks to the cars. Otherwise it is mechanically handled and piled for later loading.

### HOW WOODYARD OPERATES—

At Savannah, approximately 85% of the pulpwood arrives by rail, 10% by truck and 5% by barge. The barged wood usually is logged off islands along the Georgia coast, which are many and productive. Of all the wood coming in, approximately 20% comes off the 850,000 acres of woodlands owned or leased by Union Bag in the South.

There are actually two woodpiles at Savannah—one for hardwood and one for pine. The hardwood storage area occupies the original woodyard, while the pine storage is in a new area designed within a pulpwood flume sys-

tem which will be described later. Incoming hardwood to feed the 300-ton semi-chemical pulp operation can be unloaded direct onto the long drag conveyor leading to the barking drums or can be stored in the yard.

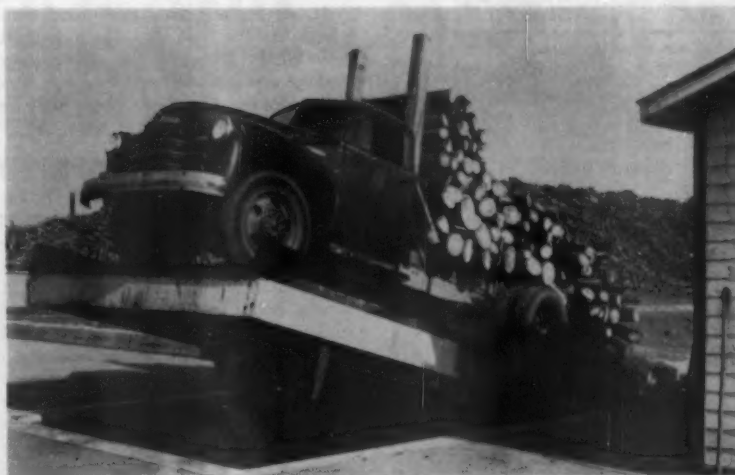
In softwood handling, all trucks are unloaded right to the flume by a hydraulic dumping arrangement alongside the scale house. Approximately 70% of incoming wood by rail is unloaded into the flume, with the balance being stored; while all the wood received by barge is conveyed immediately to the barking drums.

The flume system is roughly rectangular in shape with rail spurs paralleling the long sides of the flume and on both sides. Forty-four rack cars can be placed along each leg for unloading. The unloading track is a three-rail line, with the inner rail being used by the two gantry cranes which span the flume. One of these cranes is a specially-designed Lorain crane, and the other a Gradall. The cranes are equipped with drags rather than buckets, and can drag pulpwood from the rack cars directly into the flume. One of the cranes has unloaded up to 63 cars in an 8-hour day, and has a record of unloading a single car in three minutes.

As has been indicated, about 70% of incoming pulpwood by rail goes right into the flume. The balance is unloaded to the storage area encompassed by the flume. For handling wood in this area and at hardwood storage there is one American Hoist & Derrick locomotive crane, two American DiesElectric locomotive cranes, one American stiff-leg crane for unloading the barges, three Lima crawler cranes and one truck-mounted Michigan crane for utility handling.

**FLUME SYSTEM IS WORLD'S BIGGEST**—The world's largest woodpile also has the world's largest flume system. The flume has a design length of 4400 ft., but is built to 3200 ft., which is adequate for present requirements. There is a hydraulic gradient of about 7 ft. (actual 7.82 ft.) from the water inlet to the foot of the escalator conveyor. Design is intended to handle 200 cords per hour. There is a flow of 45,000 gpm of water in the flume, which with the hydraulic gradient produces a flow speed for from 7½ to 8 ft. per second.

The flume is of concrete construction, with a 3-ft. width at the bottom and a slope to 9 ft. 7 in. at the top. slope is 5 ft. 4½ in. The aprons from the flume slope up at 30° to the railroad tracks, and the loading aprons extend 1000 ft. along both the east and west legs of the flume. On the west leg the aprons are lined with



**TRUCK LOADS** of pulpwood are measured and then the truck tilted by hydraulic arm to empty the load in long flume system. 10% of requirements come by truck.



**RAIL CARS** can be unloaded from other side of the 3,250 ft. flume by special Lorain gantry crane straddling the flume. 85% of wood comes by rail to Savannah.



**WOOD BY BARGE** is brought off islands along the Georgia coast as far south as Brunswick. 5% of the mill's requirements is brought in this way.

## PULPWOOD SECTION



### 200 Cords Per Hour

Flume system at Union Bag is designed to handle up to 200 cords of wood an hour to the barking drums when the plant is operating on softwoods.



### This Is for "Semi-Chem"

Hardwood production comes in to Savannah by rail and truck and is placed in live storage or conveyed direct to barking drums, as in this photo.

1/2-in. steel plate over reinforced concrete. On the east leg, which is built on filled ground, the temporary aprons are built of catfaced log sections molded together. These will be replaced with concrete after settlement.

Flume water is taken from the seal pit on the evaporators, and it requires 2500 gpm to provide sprays for bark removal screens, high-pressure nozzles, and makeup water to the flume. For continual operation a Chain Belt Co. settling chamber and cleaning system has been constructed as part of the integral flume design. Water escaping from the flume through the escalator conveyor goes through three separate approach channels to the settling basin. The basin is equipped (there are three separate chambers) with drag buckets on chains to remove bark and other settled materials, and the water is screened at this point, too. The settled water passes then into the pump sump chamber to a 45,000 gpm dynamic head pump for delivery to the high end of the flume for recirculation.

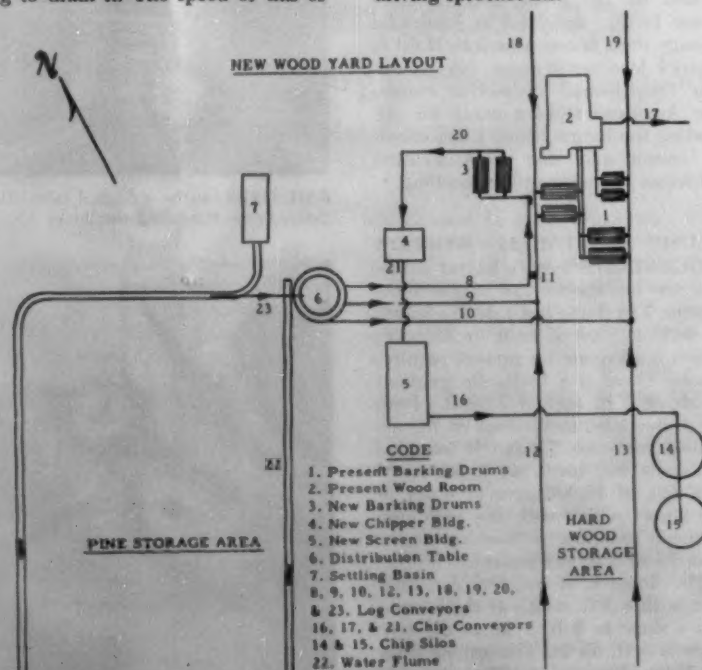
Pulpwood is removed from the flume by a 5-strand Link-Belt escalator conveyor, which is of magnesium chain with special "K" type attachments. The escalator is hinged in the center so that the tail shaft can be raised clear of the flume without having to drain it. The speed of this es-

calator is about 112 fpm, and logs at the top discharge over the head pulley to an incline chute discharging to the distribution table.

The circular rotating distribution table is 43 ft. in diameter with an 8-ft. wide steel plate forming the outer table on which the logs ride and from which they are distributed. There are three sets of hydraulically-operated "plows" which can be set across the face of the ring to discharge logs into any one of three drag-chain conveyors leading to the barking drums.

Flexibility is one of the main assets of this system. In the first place, as mentioned, it is possible to route pulpwood into any one of the three conveyors which serve three different sets (of two) barking drums. In the second place, if the drums are down, or if there is a jam on the drag conveyors it is not necessary to shut down the escalator from the flume. All that is necessary is to retract the plows and the pulpwood makes a complete circle on the distribution table and discharges back into the flume (see photos).

The distribution table is set on 30 ft. of piling with a concrete pad over the entire bed. It is 10 ft. from the table level to the top of the concrete. The table travels at 125 fpm, and is driven by two 75 hp drives, 180° apart. There is a rack under the table itself into which the constant speed driving sprocket fits.



### How It Works

Conveyor (12) carries all hardwood to point (11), thence through new barking drums, chipper, and screen room to silo (14). Pine travels through flume to escalator conveyor (23), then to distribution table (6). From this point wood moves to any conveyor, thence to either old or new chippers, screens, and to either silo (15) or chip bin.

# "WORKHORSE" at COOSA RIVER NEWSPRINT CO.

CHILDERSBURG, ALABAMA



## **Lorain Self-Propelled Crane serves many plant needs ... at many locations**

This 10-ton Lorain Self-Propelled Crane moves quickly around this paper mill yard to do many jobs—in many locations. It is a regular "workhorse" as it trots around loading and unloading pulpwood, handling odd size logs, and doing other material handling jobs. Its rubber-tire mobility, ample lifting capacity and wide range of front end attachments are cost-cutting advantages.

### **Lorain builds many crane types for pulpwood handling ...**

From 6 tons to 61 tons, on crawlers or rubber tires, there's a Lorain to fit your individual needs, whether in the woods, the collection yard or at the mill. Lorain's long experience in the pulpwood handling field has led to the development of a full line of equipment—including specially-designed crawler

or gantry-mounted rakes for high-speed unloading of cars at the mill. In addition, there are grabs, grapples, slings and tongs for handling any kind of wood—loose, piled or stacked.

### **Lorain features proved by performance on pulpwood handling jobs ...**

When you own a Lorain, you get extra values in performance, economy and long life with such design advantages as power controls; easy, smooth operation; generous use of anti-friction bearings; power-load lowering; ease of service; simultaneous hoist, swing and travel ... and many, many more.

Ask your Thew-Lorain Distributor for literature, specs and prices on the Lorain to fit your plant. He's better equipped to help you get the most for your money!

THE THEW SHOVEL CO., LORAIN, OHIO

# **THEW LORAIN®**

## PULPWOOD SECTION



### New Views of Big Wood Table

A merry-go-round distribution table shunts logs into three conveyors. Looking down on the table with the two hydraulic arms drawn back to permit logs to travel to No. 3 conveyor. Surplus logs drop into flume from table at back right.

**COMMUNICATION AND CONTROL**—The enclosed control tower for the whole wood handling operation is located right over the distribution table. This is the nerve center of the operation, and the man in the tower must be able to control every step of the work from crane to chip room.

From this control center the operator can control the sluice pump and the plows on the distribution table. He also controls the table and the escalator from the flume. He pushes a button and he can start or stop any one of the three drag conveyors to the barking drums, although these normally are controlled by the barking

drum operator. But then on top of this he has one of the most complete systems for communication yet brought to this industry.

With the telephone the tower operator can dial direct to any of these points:

- Two phones at the chip bins
- Two phones at the chip room
- One phone at the screen room
- One phone at the pulpwood truck unloading house
- One phone at the scale house
- One phone at the barking drum control station
- Two phones on the conveyors
- One phone to woodyard foreman
- One phone to woodyard superintendent
- One phone to railroad yard.

This is a direct dial system just for



**CLOSE-UP VIEW** of hydraulic arm extended to push logs off Link-Belt rotating distribution table into No. 1 conveyor. Logs enter from flume at top.



**WHEN CONVEYORS** are down, logs travel complete circle around table and drop back into flume for another trip around the yard. Woodyard control tower is at top.

the woodyard, and he can go through the operator for other mill calls.

The tower operator also has mobile radio communication with six of the cranes working in the yard. This gives him complete control so that if there is a jam at any point, he can halt unloading into the flume.

And, finally, the tower operator has a siren signal by which he can reach the men working in box cars to halt or start their unloading according to the demands of the occasion.

The story of Union Bag communication system would not be complete without mentioning that the woodyard also has two motor "scooters" at its disposal for travel around the several miles of roadway in its area.

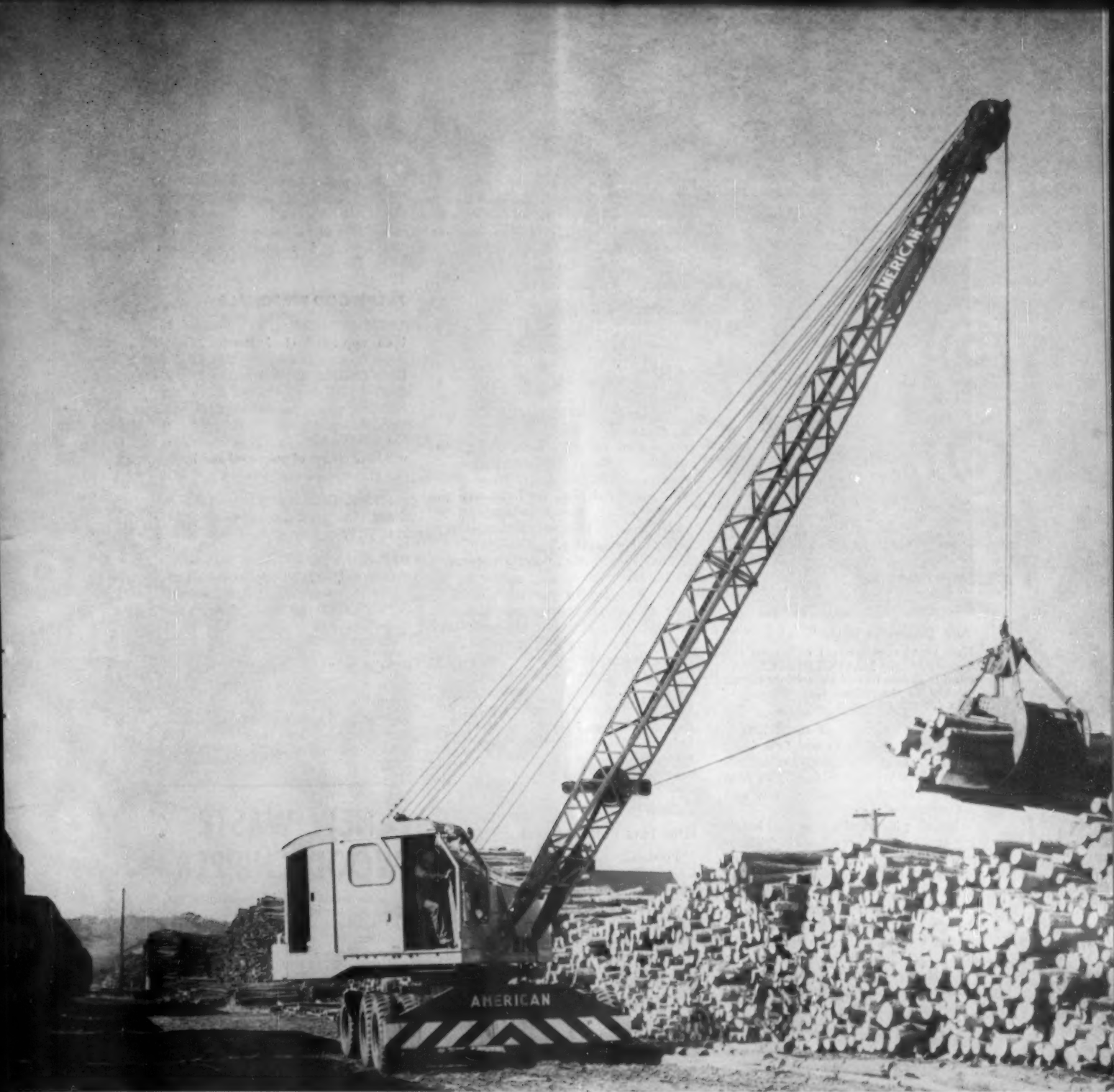
### NEW EQUIPMENT REQUIRED—

The new wood demands of the enlarged pulp mill required new equipment in the woodroom, and wood preparation areas, too. Included in equipment were two 12 by 45 Fibre Making Processes barking drums to



### Dirt Is Removed

**CHAIN BELT** Co. settling chamber to remove grit, sand and sand-impregnated bark from flume water has three separate approach channels to slow water velocity. Grit truck in foreground; bark storage from drums in rear.



## CUTS PULPWOOD HANDLING TIME

The American Cruiser Crane shown above attacks the problem of reducing pulpwood-handling time in three ways. *First*, operator efficiency is increased: Anti-friction bearings in American's brake linkage reduce leg effort over 60%; efficient cab layout gives the operator an unobstructed view of the job; and easy-to-reach levers minimize operator fatigue.

*Second*, loading and unloading cycles are speeded up. Contributing to the over-all smoothness and accuracy which means faster, more-efficient operation are such American features as: power-controlled boom lower-

ing; permanently-aligned shafts, gears and assemblies; one-piece electrically welded machinery deck; and anti-friction bearings at every vital point.

*Third*, these versatile cranes with interchangeable fronts, are engineered for extra capacity. Hour for hour, load for load, American Cranes—Cruiser, Truck or Crawlers—outproduce anything in their field *with less maintenance cost*. For full details on how American Cranes can cut handling time in your pulpwood or lumbering operations, write American Hoist & Derrick Company, St. Paul 1, Minnesota.

## PULPWOOD SECTION



### Two Drums at Right

New wood requirements called for two new FIBRE MAKING PROCESSES barking drums to add capacity to the six already in operation. New drums are 12 x 45.

add to six already in operation. It was also necessary to add two 40-ft. diameter chip silos; one 110-in. 10-knife Murray chipper; five Tyler chip screens; Merrick Weightometer; and a Carthage rechipper.

Housing included a new chip building and a new screen building. These new buildings were made separate to eliminate bucket elevators and to make possible use of incline conveyors. The chip conveyors are 36-in. rubber belts, and there are 17-ft. diameter rotary table feeders under the chip silos. The silos and all conveyor steel is coated with Earl Paint Co. Erkote mastic for prevention against corrosion.

One of the busiest pieces of equipment in the whole wood operation is the 190-in. Bridgeport knife grinder. This grinder runs 48 hours a week,



and in 8 hours sharpens something like 100 30-in. knives for the five chippers. Daily output of 3200 cords is quite a chipping and knife-consuming operation!

### Ontario Pulpwood Outlook is Bright

"How are you fixed for wood?" asked Gordon Godwin, woodlands manager of Ontario Paper Co., Montreal, recently when addressing a meeting in Woodstock, Ont. He answered the question himself.

"We have established that at present cutting rates we have enough to run the (Ontario) pulp and paper industry forever," he said. "Except for white and red pine, we have enough to last all the forest industries forever. And there is a substantial reserve for expansion."

Mr. Godwin was referring to forests of Ontario, which today sustain more than 40 mills. His company, Abitibi Power & Paper and the governments and the Pulp & Paper Research Institute are cooperatively studying forest regeneration.

"The weight of authority inclines to the opinion that there is being established a new forest as good as the old," he said. "We are not thinking of fixed sustained yields or of resource depletion. We are planning for resource expansion."

### Talbot In D. C. Post; Firm Has Pulp Interest

Fred C. Talbot Jr., of Pope & Talbot, Inc., one of the major logging firms of the Pacific Coast, has succeeded Russell C. Flom, of Marathon, as director of the Forest Products Division, BDSA, Washington, D. C. Mr. Flom was advanced to be one of the three assistant administrators of BDSA.

Incidentally, the Pope & Talbot firm is one of the Far West logging companies often rumored as a likely future producer of woodpulp, possibly combining with some major

eastern paper firm. This has been the general trend of most big logging firms out West, to get more complete utilization of resources. Pope & Talbot already is a producer of wood chips for pulp.

### PULPWOOD PERSONALS

JOHN L. HARTRANFT, forester, has been appointed chief forester, Oxford Paper Co., according to ROBERT R. DRUMMOND, general manager, wood dept. ARTHUR F. LINCOLN, forester-fieldman, was appointed supt. of wood procurement. CHARLES R. ATWOOD has been named supt., local division and will have charge of pulpwood and lumber procurement in the local truck area.

JAMES K. DICKSON is promoted to assistant supt., local div. and CLAUDE H. MACKAY, is new supt., Canadian div.

RAY MALECKI of Union Bag, is new chairman of the Southeast Technical Committee of American Pulp Assn., succeeding KEN TROWBRIDGE, of North Carolina Pulp. Next meeting will be in Atlanta.

PERCY WILSON, forester, Champion International Paper Co., Lawrence, Mass., is building his own colonial ranch type home on weekends. He learned plumbing as a Boy Scout and electricity in U.S. Army Communications.

## NEW WASTE WOOD CHIPPER

A waste wood chipper especially designed for sawmills who wish to make chips economically is offered in three disc sizes: 36", 42" and 48". Under normal operation these chippers can produce up to 15, 18 and 22 cords per hour respectively with low horsepower.

Tests made on southern pine slabs indicate that the chips produced by these machines may not need screening. The economy factor from this point alone is considerable. Most sawmills can pick enough clean wood off their waste conveyor to make a chipper installation well worth while, even without barking.

These chippers are ruggedly constructed and are designed especially for easy installation and low maintenance. These chippers are produced by the Hansel Engineering Company, 1500 Westlake Avenue North, Seattle 9, Washington. Inquiries in the South may be made to Owen-Richards Company, 1009 2nd Avenue North, Birmingham 4, Alabama.

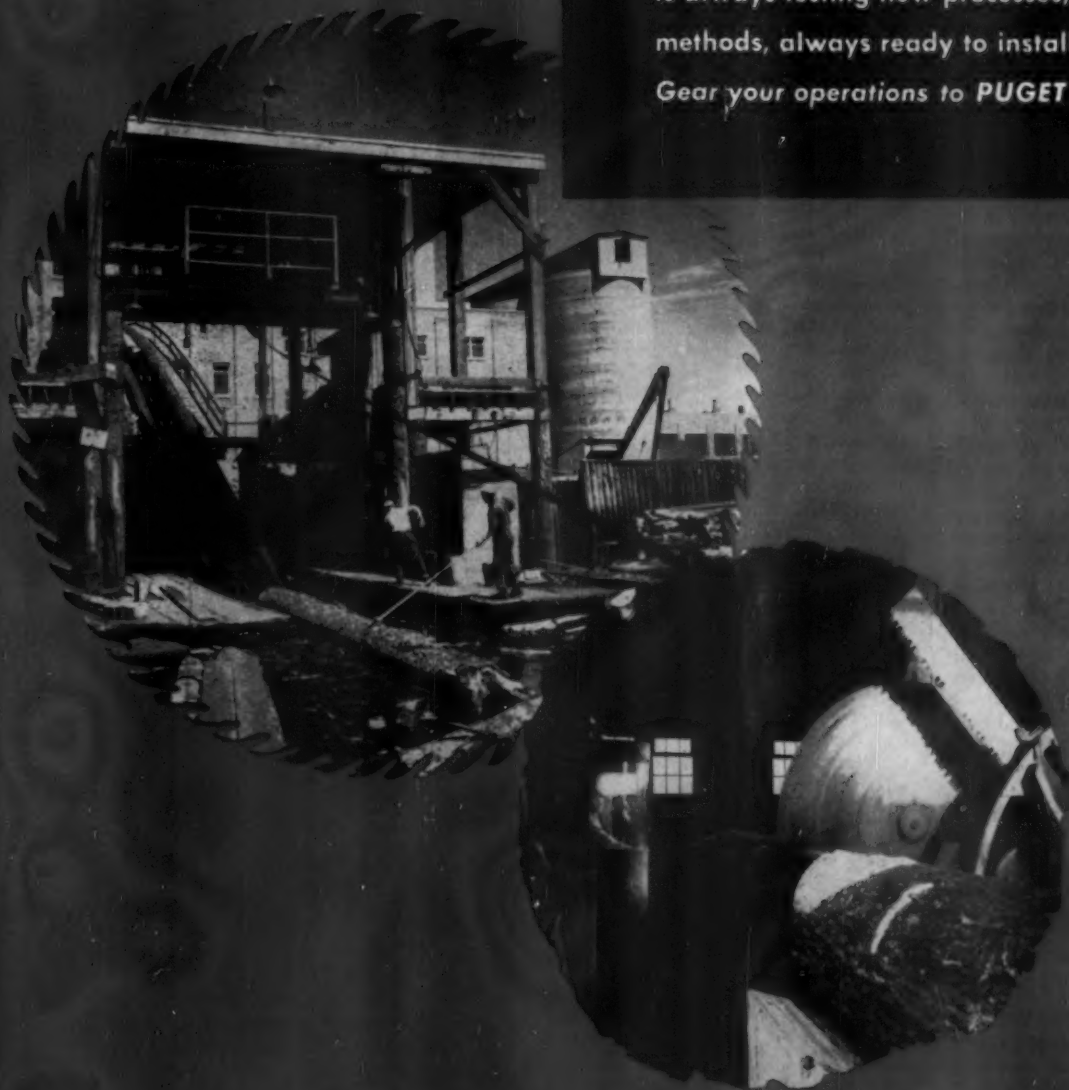
Comparative tests made with the Hansel chipper and other chippers on Southern pine slabs indicate that the Hansel chipper makes a superior paper with greater strength. As a result of these tests several of these chippers are being ordered by a large kraft mill in the South.

(ADVERTISEMENT)

### A Busy Place

Busiest piece of equipment is this BRIDGEPORT 190-in. knife grinder which grinds knives for 5 chippers handling 3200 cords of pulpwood a day. Grinder sharpens about 100 30-in. knives a day.

**PUGET PULP**—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to **PUGET PULP.***



# PUGET SOUND

**PULP AND TIMBER COMPANY**  
BELLINGHAM • WASHINGTON

# What Latin Americans Propose

Propositions for investment in mills are made at New Orleans. Frank Peterson of Black-Clawson Cos. gives views

• The Inter American Investment Conference in New Orleans, which opened Feb. 28 and was to run through Mar. 3, brought forth at least three or four specific proposals for pulp and paper projects in which North American business men were invited to invest.

As reported in the Feb. issue of PULP & PAPER, this meeting was endorsed by President Eisenhower and he assigned officials of Chamber of Commerce of U. S. and Investment Bankers Association of America to co-operate. Invitations were issued by the City of New Orleans and Time-Life International, New York.

About 50 Latin Americans were on hand. The conference brought them together with potential North American investors, but it was emphasized that assurances of reasonably safe and profitable investment were expected. No promises were made in advance.

Rudolf S. Hecht, of International House, New Orleans, the chairman, advised PULP & PAPER of the numerous advance listings of enterprises but there were not many in the pulp and paper field. Three of these were from Cuba, another from Mexico.

Since the American paper and pulp industry officially offered to lend its assistance, technical and otherwise to the development of South American expansion to meet increasing demands of 160,000,000 Latin American for these products, there have been many pros and cons voiced on the subject. Last month, conflicting views of prominent leaders of the U.S. and Canadian industry were published in PULP & PAPER.

## PETERSON GIVES HIS VIEWS—

Here is a further comment from a machinery manufacturing company executive. It is obvious that Frank T. Peterson, executive vice president of The Black-Clawson Cos., is not speaking solely from a selfish point of view. Very few executives affiliated with this industry have had as much experience as he has in foreign commerce. He was stationed in Europe for a long time by Black-Clawson and has made several trips to Latin America. This is what he writes:

"We should stimulate the shipment of raw materials (in the form of pulp) to South America by urging a stronger financial entity to grant credit to Latin Americans, accepting negotiable documents or instruments of the various state banks as credit guarantees, with

over-riding guarantees of an American financial group. I believe this is going to be one of the major ways to sell pulp in any quantity to South America in the future.

"South America will inevitably strengthen her internal industrialization and internal economies throughout the years by the establishment of pulp and paper mills with the abundance of raw material that there is there. The same so-called group of financial committees or trade stimulations should do everything possible to stimulate the investment of American capital down there by securing cooperation from the various national governments to guard against expropriation of the industry or lack of convertibility of the profits or lack of capital retirement back to the original investor—an over-riding guarantee on these points from either the American government or this financial group would be invaluable. South America will either be our market or the European's market, and I hope it will be ours.

"Regardless of what we want done, South America, and particularly Brazil, will forge ahead with the installation of new paper and pulp machinery and the erection of new pulp mills, therefore, we should intelligently go after this business."

## The New Orleans Offerings

Here are Latin-American projects offered at New Orleans:

**CELLULOSE MANUFACTURING PLANT**—Corporation with present capital of \$480,000 U.S. proposes mill to produce 15,000 tons per year of quality cellulose, wrapping paper, corrugated paper and liners. Products would be protected under Mexican law as a domestic product. Raw materials would be provided by the corporation which has concessions of forest zones under exploitation. Capital needed, about \$2,400,000 U.S. For further information see Carlos A. San Roman, Mexican Headquarters (New Orleans International House) Project No. 5. Mexico.

## PULP AND PAPER FROM BAGASSE

—A company being organized seeks to install and operate a plant to supply Cuban market for bagasse pulp and paper which is now being imported. Annual Cuban market should be between 72,000 tons and 117,000 tons. Capacity of projected plant is 15,000 tons yearly. Capital requested, up to \$7,362,000. Participation to be determined with in-

vestor. For information inquire their representative at the Cuban Headquarters, International House, New Orleans. Project No. 2. Cuba.

## ALPHA CELLULOSE FROM SUGAR

**CANE BAGASSE**—Company organized in 1954 to manufacture alpha cellulose from bagasse with resulting by-products at a comparable cost of other manufactures of cellulose. Capital needed, \$5,000,000. U.S. to invest \$4,000,000 as working capital. Participation, the amount of preferred shares and 50% of common stocks; the first bearing 5% interest, plus dividend pertaining to the common stock. Profits, sponsors believe, will range from 30%-40%. For detailed information see Ing. Alfred K. Wilhelm at Cuban Headquarters. Project No. 13. Cuba.

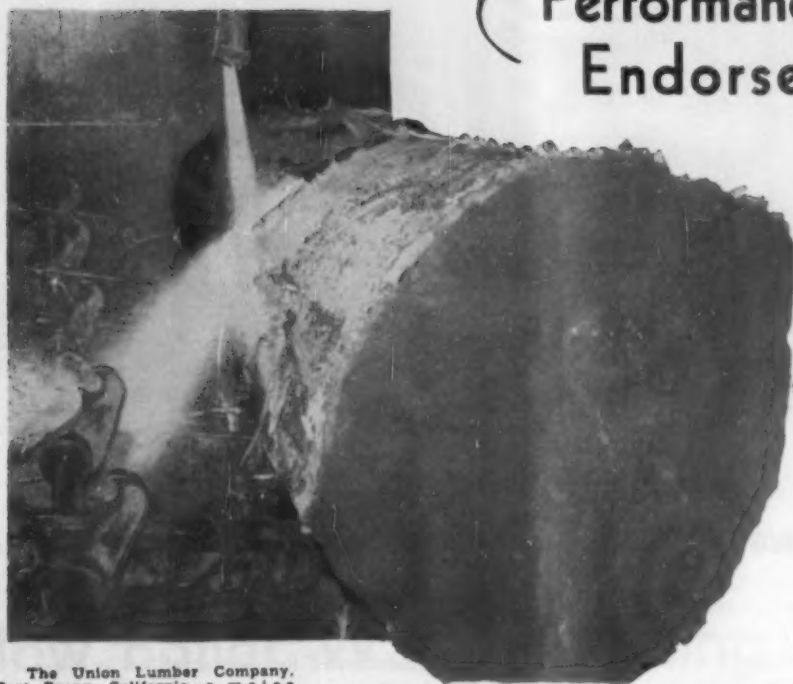
## PAPER MILL EXPANSION—

Firm in paper business over 20 years wants to expand. It has a paper mill constructed in 1953 for \$253,000 which has a capacity of 7 tons per day. Production too small for demand. Considering another machine with 30 ton per day capacity to make not only bond, but manifold, mimeo and others. Also wants to expand conversion room with Duplex cutters, paper cutters, etc., involving new building construction. Would like to obtain financing of \$500,000 on basis of 10 year mortgage bonds paying 7% per annum. For further information see Pedro G. Celorio at Cuban Headquarters. Project No. 16. Cuba.



**Silvernail Heads Committee; Stirling Becomes Officer**

LLOYD H. SILVERNAIL (left) head of the Paper Section of Coatings Technical Service, The Dow Chemical Co., Midland, Mich., is Publicity Chairman for TAPPI's 6th Annual Coating Conference at the Statler Hotel, Cleveland, May 22-25. Graduate in pulp and paper, Syracuse University, he joined Dow in 1945 as a chemist in the Cellulose Products Dept. In 1951 he moved to Coatings Technical Service as head of the Paint Section, and assumed his present position in 1952. THOMAS L. STIRLING (right) has been named Vice Pres. in charge of Sales, Champion-International Co., Lawrence, Mass. He joined this company two years ago after being Vice Pres. for book paper sales for LaSalle Paper, and before that was in western sales and also Mill Mgr. for Oxford-Miami Paper Co. Before war service as a Navy officer, he was with Hercules as paper chemicals sales rep. and was Mgr. of their British subsidiary.



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Endorsement!

The Union Lumber Company, Fort Bragg, California, a major Redwood operation, compared the performance of over sixteen different types of barking installations before selecting the Sumner BELLINGHAM-type HYDRAULIC LOG BARKER here shown debarking an 8' diameter Redwood log. (Note how the size of this log dwarfs the nozzle and water action.)

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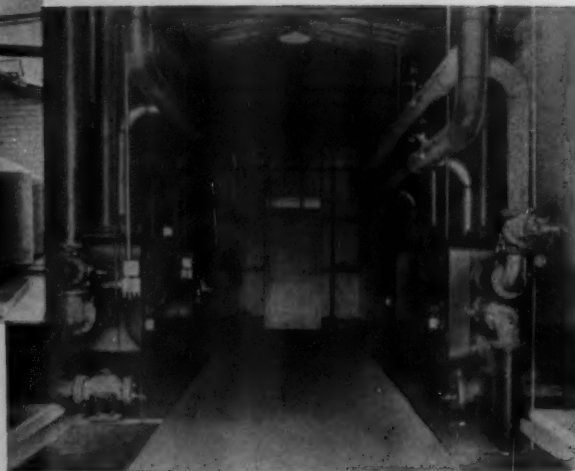
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for new water treatment plant serving 840 psi boilers

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gpm, the system may be readily expanded by adding additional Cochrane Demineralizer units. The regeneration of the demineralizers is controlled by Cochrane Automatic Rubber-lined 6" Hydromatic Valves. The automatic system assures accurate control with a minimum of manual attention. The average treated water has a silica content of less than 0.05 ppm, and a conductivity of 10 micromhos, equal to 2 ppm of total solids or less, at a pH of 8–8.5.

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For further information on Cochrane Demineralizers write for Publication No. 5800.



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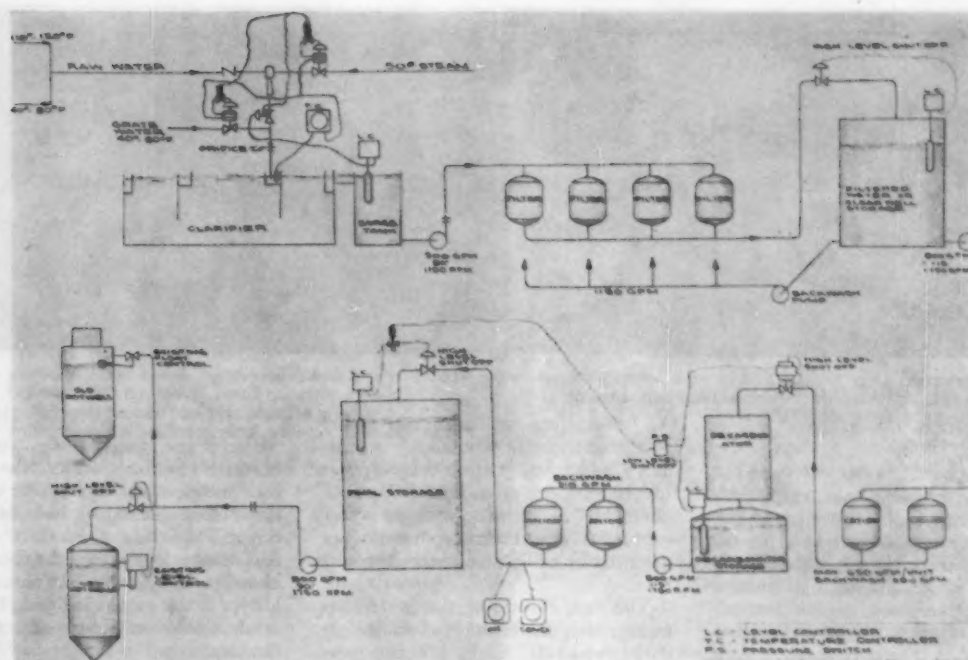
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FLOW DIAGRAM OF AUTOMATIC DEMINERALIZER AT LONGVIEW FIBRE CO.

## New Boiler Water Treating Plant

How an automatic demineralizer, one of first of kind in this industry, handles Longview Fibre needs

By Alan D. Anderson

• A new boiler feedwater treating plant at Longview Fibre Co., Longview, Wash., an 800 gpm Cochrane demineralizer including pretreating equipment, was installed at a total cost of \$273,000 and has capacity to handle all feedwater make-up requirements of the 900,000 lb./hr. steam plant.

(This is the second largest Kraft mill in the Far West, with capacity for 450 tons of board and 250 of paper daily.)

The new treating plant, which replaces a smaller hot-lime Zeolite unit, is automatically controlled and no operator is on duty. Any necessary checking or adjustments are made by the shift engineer in charge of the entire steam plant.

Increased make-up requirements and silica removal problems led us to investigate both feedwater evaporators and demineralizers.

Our boiler feed make-up had increased to about 40% with plant expansion. Mr. Anderson is Pulp Mill Engineer at Longview Fibre Co., Longview, Wash.

during the past few years so a larger capacity treating system was needed. It was also felt that our 825 psi boilers required a better feedwater. In addition, analysis showed that a fully automatic system was economically justified.

After reviewing estimates on feedwater evaporators and demineralizers with our consultant, R. C. Powell, it was decided the demineralizers were economically more suitable to our plant conditions.

A review of the mixed bed demineralizers indicated that the problem of regeneration and subsequent re-mixing of the resin bed had not been satisfactorily solved at that time on a full scale plant basis.

For this reason, although it may have been possible to obtain a more silica-free water from a mixed bed type, it was decided to eliminate the mixed bed unit from further consideration and compare only the two- and three-stage types.

Also considered was a decarbonating tower located between the cation and anion stages where carbon dioxide

is removed by a stream of air. With the two and three stage demineralizers, this tower was found to pay for itself in chemical savings within two years, and was therefore incorporated in the final plant.

Two materials were considered for the cation beds: First, a carbonaceous material of low initial cost and requiring only a simple regeneration system, but which, according to published information tended to break down under a high chlorine content in the water; or second, a styrene resin which had more capacity per cubic foot and would stand up under a higher chlorine residual, but with a higher initial cost and requiring a more complicated regeneration system.

The styrene resin was finally selected due to the fact that the mill raw water is chlorinated to maintain a minimum residual of one part per million, which is above the limit recommended for the carbonaceous resin.

The three-stage unit plus decarbonator was eliminated since the cost of the additional rubber-lined tanks,



FIG. 1—Revamped Dorr tank, formerly used for green liquor storage, now used as clarifier-settling unit, treating raw water at 1,350 gpm (max.).



FIG. 2—Filter and regenerative storage area, showing 4 Cochrane anthracite filters (lower right), 60,000 gal. storage tank, and sulfuric acid and caustic storage tanks at left. Tanks were by American Pipe & Construction Co.

resin, and piping, in our case was not justified by the chemical saving or increased purity of the water produced.

To prevent contamination of the cation and anion exchange material water pre-treating equipment to remove iron, aluminum, and organic impurities was recommended. It was further recommended that only water with a turbidity of ten parts per million or less and no color should be pumped to the resin beds.

After careful consideration of the above mentioned factors, a two stage demineralizer with a decarbonating tower and a preliminary water treating system was finally purchased from Cochrane Corp. through C. C. Moore & Co., engineers. See the accompanying flow diagram.

**HOW WATER IS TREATED**—An old Dorr clarifier tank (Figure 1), 50 ft. in diameter by 10 ft. deep, was completely revamped to make a clarifier-settling tank to treat the incoming raw water at a maximum rate of 1,500 gpm.

Raw water enters the clarifier through a steam mixing chamber, cooling water tee, and metering ori-

fice. Cooling water from the evaporator condensers at a temperature of about 110° F. is the normal raw water supply. When the evaporators are down, cold mill water enters the system.

The temperature of the water entering the distribution launder is maintained at 97° F. by a Taylor temperature controller operating either a steam control valve or a cooling water control valve.

A Fisher Leveltrol operating a Continental butterfly valve in the raw water line controls the level in the clarifier.

Lime slurry and alum are fed to the clarifier for coagulation and settling. A batch system is used in the preparation of lime slurry and alum solutions for introduction to the clarifier in the coagulation and settling of this water supply. Liquid alum is run from a 1,400 gal. mild steel storage tank into a wood measuring tank where the alum is diluted to the desired strength. A steam grid is used for agitation in the alum measuring tank.

The chemical feed out of the measuring tanks is controlled through a Bailey Flowmeter. For a fixed volume

of water to the clarifier, the Bailey flow meter sends an impulse to a relay which actuates two Microflex timers. The timers, in turn, operate decanting devices in the lime and alum tanks. As the decanting pipe lowers in the measuring tank, the lime or alum solution is pumped out to the clarifier.

Two Ingersoll-Rand pumps are piped up for each chemical feed, one being a stand-by. The lime slurry discharge piping has been installed in duplicate to allow continuous operation while cleaning out a plugged line. This method was thought advisable, based on experience with plugging lines on our old hot-lime Zeolite softener.

The clarified water is pumped from a small surge tank through four 10 ft. diameter anthracite filters into a 60,000 gal. filtered water storage tank (Figure 2). Back-wash water for the filters is drawn from this tank. Since the back-wash rate is about 1,000 gpm and make-up to the boiler feedwater system at present is 700-800 gpm, the storage tank takes care of the high water demand during the back-wash period and also acts as a reserve sup-



FIG. 3—Rubber lined cation tanks equipped with Cochrane Hydromatic valves for controlling rinse, backwash and dilute acid flows.



FIG. 4—Decarbonator tower and storage tank with Ingersoll-Rand acid-bronze pumps and Type 316 Northwest Copper Works stainless piping.



FIG. 5—Cochrane 470 GPM capacity (each) anion tanks, with Northwest Copper Works stainless piping.

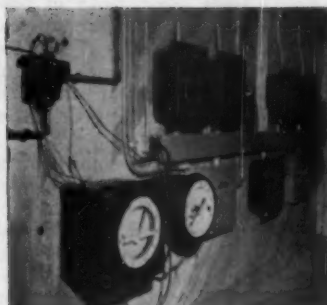


FIG. 6—Cochrane controls for regeneration. Final pH and conductivity recorders at lower left.



FIG. 7—Cochrane acid regenerative system with Duriron acid pumps.



FIG. 8—Ingersoll-Rand acid bronze pumps at final storage tank. Causal (Lukenheimer) metal valves, Northwest Copper fabricated check valves and stainless piping.

ply of feedwater.

Filtered water is pumped from the storage tank to the demineralizer building. Here the water enters two rubber-lined cation tanks, each 10 ft. dia. by 8 ft. on straight side, charged with high capacity polystyrene exchange resin designated as Cochranex CRZ (Figure 3).

From the cation tanks the decarbonated water flows to the decarbonator tower (Figure 4). This wood tower is filled with layers of redwood slats. A large blower forces air in at the bottom of the tank to blow up through the water that is cascading down over the wood slats. In this operation the major part of the carbon dioxide in the

water is released to atmosphere, reducing the amount of regenerant that would otherwise be required for the anion beds.

The water is collected in a small decarbonator storage tank and then pumped through the anion units for final treating.

With the exception of the internal pipe grids and resin, the anion tanks are similar to the cation units; 10 ft. in diameter, 8 ft. on the straight side, and rubber lined. The strongly basic resin utilized in the anion exchange vessels is the type I material designated as Cochranex AT.

Following the anion tanks is a 120,000 gal. treated water storage tank

which acts as a feedwater reservoir.

Since effluent from cation tanks is on the acid side, pH of about three, the piping and valves from the cation units to the decarbonator tower and from the decarbonator storage tank into the anion units were fabricated from Type 316 stainless steel (Figure 4).

Acid bronze pumps were installed after the decarbonator tower storage tank and after the final storage tank. All the transfer pumps were supplied by Ingersoll-Rand and are a double suction, split case, centrifugal type.

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Piping from anion tanks to final storage, and from final storage into our existing hotwells is Type 304 stainless steel thinwall pipe. Causul (Lukenheimer) metal gate valves and Type 316 stainless steel check valves were used in this line (Figure 8).

To further prevent contamination in the system, the inside surfaces of the filtered water storage tank, the decarbonator storage tank, and the final treated water storage tank were painted; a minimum of a four coat, 8-mil total thickness of Resoweld for the filtered water tank, a minimum four coat, 20-mil total thickness of Phenoline for the decarbonator storage, and a four coat, 8-mil total thickness of Permalite for the final storage.

#### OPERATION OF REGENERATION

—Operation of the cation and anion regeneration system is quite complicated with controls so arranged that operation may be either semi-automatic or completely automatic (Figure 6).

A 6-in. rubber-lined Cochrane Hydromatic design valve equipped with 40-watt pilot driver for automatic or semi-automatic operation, on each cation and anion unit facilitates carrying out the backwash, regenerate, slow and fast rinse phases of the cycle and finally return to service.

Concentrated (93% sulfuric) acid or caustic (50% NaOH) is pumped from 7,000 gal. outside storage tanks to measuring tanks inside the demineralizer building. Both of the storage tanks are made of mild steel. The acid storage tank has an air dryer on the vent to prevent moisture from entering. The caustic tank is insulated and temperature controlled.

From measuring tanks, acid or caustic is automatically pumped as required through flow and shut-off valves into mixing chambers, where it is diluted and then flows to the regeneration grid (Figure 7). For the dilute acid and caustic lines after the mixing chambers, we have installed a polyvinyl chloride type of pipe (Boltaron 6200). The plastic pipe has been satisfactory but extra supports are required to prevent sagging.

Fixed volumes of acid and caustic are measured for each regeneration by means of electrical probes in the measuring tanks. The concentration of the dilute acid and caustic solutions is maintained within close limits as set up by the demineralizer manufacturer.

The total regeneration cycle on the cation units requires ninety minutes; on the anion units, three hours.

The final water purity is continuously recorded on both a pH meter and a conductivity meter. Contacts in the recorders are used to set off an

alarm on the annunciator panel in the turbine room, should the water purity drop below certain limits before the units have passed the arbitrarily fixed volume set on the counters. The turbine operator then contacts the shift engineer who checks the individual anion and cation units to see which is going bad and take it off the line for regeneration. Solu-bridge conductivity indicators were supplied on the discharge of each unit for this purpose.

#### HOW TROUBLE WAS SOLVED—

During the first few months after start up, trouble was experienced with the automatic control system. We found one set of probes in the acid measuring tank that had been switched with those in the caustic measuring tank. These probes in the acid tank were corroding and the circuit to the control panel was not completed. This upset the electrical sequence and until the trouble was found the units were placed in service manually. In addition, several contacts were not making up properly. Since the poor contacts have been found and adjusted, the controls have worked with no trouble.

Since start-up, capacities of the beds between regenerations have shown a tendency to drop off. This has been due in part to a large change in total hardness in raw water supply. Also, an inspection showed an uneven resin bed in anion units. With these beds leveled off and put back in service the units are now approaching their former capacities.

The demineralizer gives an excellent water for our purposes. The average water leaving the anion units has a conductivity of ten micromhos, or less, at a pH of 8 to 8.5. Silica content has run less than 0.05 parts per million as  $\text{SiO}_2$ .

The water treating plant has not been in operation long enough to accurately determine what effect the demineralized water has on the boilers, turbines and overall feedwater and steam system, or to collect accurate information on chemical costs. However, from the information available, these costs appear to be running slightly higher than originally estimated.

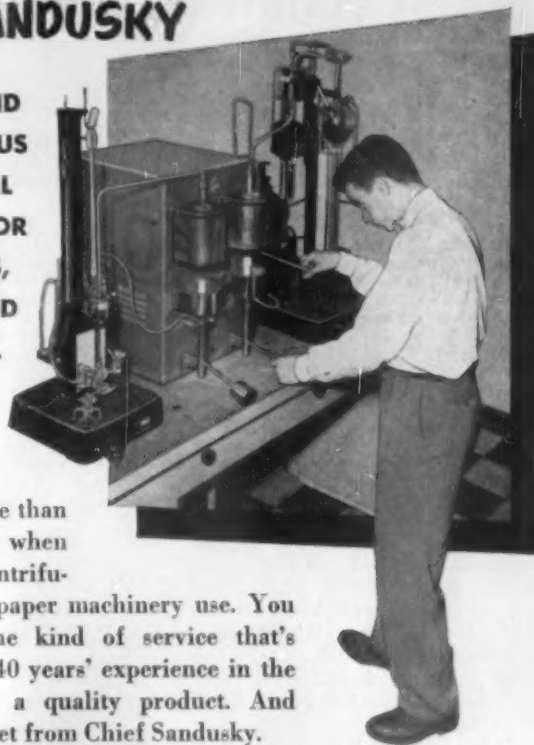
Blowdown on the two low-pressure boilers has been materially reduced. On the high-pressure boilers, which in the past used higher quality water and condensate, the effect was less apparent.

Before installation of the demineralizer the steam plant was operated with the less efficient low pressure boilers on the line. It is now operated with all of the 825 psi recovery and direct fired boilers as process and steam requirements demand.

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#### This Equipment Makes World's Finest Paper

In Institute of Paper Chemistry is now displayed this papermaking equipment from Najo, Japan. Najo is only place remaining in Japan where artisans sit while working, a practice dating back to 7th century. These handmade papers are used in U. S. and Europe for printing engravings, etchings and woodblocks. In case at right is beater stone on bamboo stick from Punjab.



#### Part of Dard Hunter Museum, Now at Institute

In case at left is a stamping mill used for beating rags for papermaking in Kashmir, North India. The same equipment has been used for centuries there. Early European stamping mills operated on the same principle. Smaller papermaking devices are under glass. Chinese and Japanese block printing and brightly colored paper samples are displayed. These exhibits were moved to Institute of Paper Chemistry from MIT.

## How Dard Hunter Museum Looks in New Home

● Hundreds of specimens of centuries-old paper and rare watermarks, models of the first Fourdrinier and other papermaking machines, vats and other devices gathered in 40 years of worldwide travel—these are now on display in the Institute of Paper Chemistry's General Activities Building.

This, of course, is the famed Dard Hunter Museum, moved there from Massachusetts Institute of Technology. Tuesday to Friday afternoons, 1:30 to 4:30 p.m., and other special occasions it will be open to visitors.

Dard Hunter, world authority on hand papermaking and author of many books on paper, is expected to give lectures and seminars on the subject at the Institute and continue his research there. He was expected in Appleton in late February. Meanwhile, President Westbrook Steele, who obtained the rare collection for the Institute, placed George A. Graham, administrative coordinator, in charge.

The collection is displayed in chronological order in the sub-basement of the new General Activities Building. There are specimens of early Chinese rice paper, papers made from thistles, corn husks, leaves, grass and inner bark of trees.

There is a scale model of the first machine made for Henry and Sealy Fourdrinier, English stationers, in 1798, which was produced from plans developed by Louis and Nicholas Robert, French papermakers. It became the Fourdrinier machine, and



#### "The Paper Detective" Moves To Institute in Appleton

DARD HUNTER (left), "The Paper Detective," who has moved himself and his famed Museum of Paper to Appleton from Cambridge, Mass. He will continue his activities as the Sherlock Holmes of the paper world. Now past 65, he says: "If I retired I would have to give up my hobby—paper—and go to work."

GEORGE A. GRAHAM (right), Administrative Co-ordinator of the Institute of Paper Chemistry, directed tricky loading job of exhibits in vans at MIT and traveled right with his precious cargo to Appleton, where he was in charge of setting it up.



there has been no substitute for it in 157 years.

There is an Indian loom for making hand papermaking molds, given to Mr. Hunter by Mahatma Gandhi. Early Chinese and Japanese block printing and brightly colored paper samples are shown. Most of the smaller items are under glass and some of the papermaking vats or devices are in the open. Many old books on papermaking are in the exhibit.

Also in this area, Mr. Hunter's own

unique Lime Rock, Conn., hand papermaking mill, which he operated from 1928-1931, will be set up.

#### British Delegation Coming To America in June

A British industry delegation is making plans to come to Canada and possibly the United States in June. It will represent the Technical Section of the British Paper and Board Makers' Association at the annual summer meeting of the Canadian industry's Technical Section at Chateau Frontenac, Quebec City, June 6-8.

Arthur Baker, senior technical advisor of Bowaters and founder of the British Technical Section, expects to accompany the group.

It is expected that some of the delegates will go to Tennessee to tour the new Bowaters operation there, and may also go to Appleton, home of the Institute of Paper Chemistry, and visit other U.S. mills, as well as Canadian.

#### Ralph Kumler Joins Waste Paper Council

Ralph W. Kumler has been elected secretary-director of the Waste Paper Utilization Council, 122 E. 42nd, N. Y. C.

The Council seeks to improve quality and reusability of waste paper, largest source of papermaking fibers. Mr. Kumler is ex-technical director, Paper Chemicals Dept., American Cyanamid Co. Recently, he was a consultant with Foster D. Snell, Inc.

### Collet Returns To Brazil as Mill Head

M. H. "Bud" Collet, president of Rigesa, S.A., West Virginia Pulp & Paper Co.'s subsidiary operations at Valinhos, Sao Paulo, Brazil, returned there recently after a two months' vacation in the United States with his family.

Mr. Collet, formerly a forester in the South for West Virginia, went to Brazil two years ago to take charge of the new West Virginia properties.

John D. Wheeler, formerly in charge of tall oil operations at West Virginia's Covington, Va., mill, is plant manager at the Brazil mill, which has a Fourdrinier and two wet machines and makes paperboard and corrugated products.

### Graphic Arts Talks

An all-day session on graphic arts matter—printing, coating, paper quality, clays and adhesives—this is the program at the Hotel Harris, Kalamazoo, Mich., on Thurs., Mar. 3. Both luncheon and dinner will be on the program, sponsored by Kalamazoo Valley TAPPI.

Walter Granville, dept. of design, Container Corp. of A., will talk on order and confusion in color, and there will be a panel with Robert W. Wilkerson, Minerals & Chemicals Corp. of America, Metuchen, N. J.; Harry Hadley, Gardner Board & Carton; John Langmaid, Jr., S. D. Warren Co.; Dwight Monaco, McGraw-Hill, and A. Lowenstein, Appleton Coated Paper.

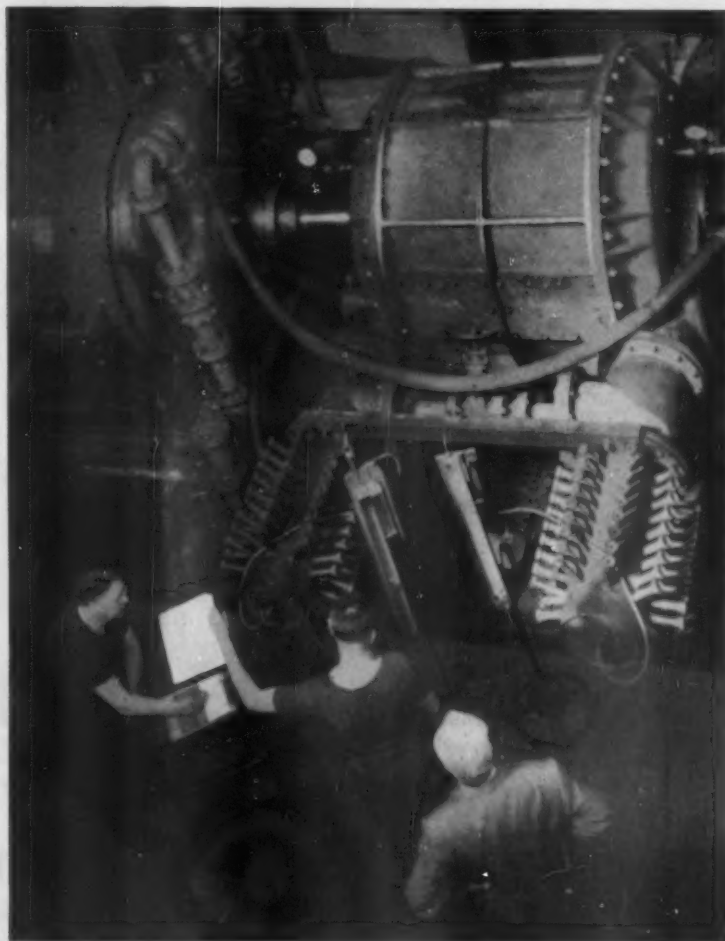


### Everest Gives Books to Michigan State College

D. CLARK EVEREST (right), Chairman of Marathon Corp., is being thanked by MISS K. M. STOKES, Head Librarian of Western Michigan College, Kalamazoo, for a gift of his 38-volume rare books collection, worth \$2,000, including 12 volumes by DARD HUNTER, the famed "paper detective." In background F. L. CHAPPELL, of Hercules Powder Co., Chairman of MSC's Paper Tech. Dept. Library Committee, is looking on.

PULP & PAPER — March 1955

## Rated performance of every Nash Vacuum Pump is assured by this precise laboratory test



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## Fox River Paper Will Add New Machine

Fox River Paper Corp. is planning the addition of another paper machine at its Telulah Division in Appleton, Wis., for production of its cotton content writing and technical papers.

This is a longer term plan, but designs are already completed for converting its Patten mill into an air-conditioned finishing department and paper storage building to be connected with Telulah.

Already Telulah production has doubled since 1946, with expenditure of \$2,250,000, and a new unusual cotton pulp plant has reduced cost of this papermaking material by a third. And power facilities are being added.

In a letter to PULP & PAPER, William Roberts, president of Fox River, advised of these plans and expressed regret recent publicity had emphasized the suspension of old part of the Fox River operations. The only machine which was still running in



**Fox River Men in News**

In a letter to PULP & PAPER, WILLIAM ROBERTS (left), President, explained recent publicity exaggerated suspension of its Fox River Division. Actually only one machine had been running in that old mill. HARLEY BARNEY (center) was elected Treasurer of Fox River Paper on Jan. 17. He continues in charge of purchasing. DR. H. P. DIXSON (right), Vice Pres. in charge of Mfg., has a major role in improvements and expansion of this company.

the high cost older Fox River Mills Division has been suspended.

Telulah, acquired from Kimberly-

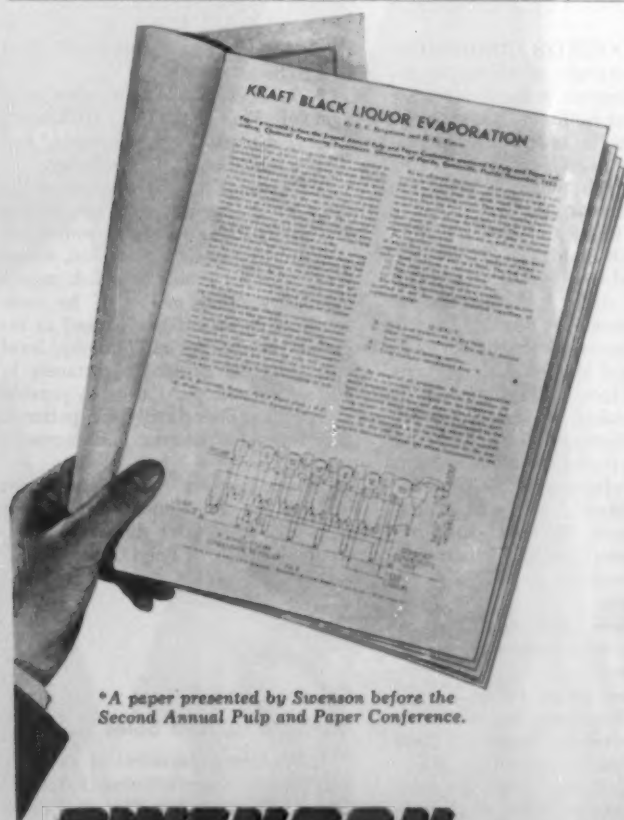
Clark in 1920, previously had \$1,000,000 spent on its conversion to cotton papers at that time. Patten mill was acquired in 1938.

## New Paperboard Mill Near Los Angeles

Kalop & Co., Los Angeles and Richmond, Calif., will build a paperboard mill at Port Hueneme (Y-Nay-Me), some 80 miles north of Los Angeles. Robert W. Stevens will be consultant.

When complete the mill will produce 125 tons per day of all grades of paperboard. The multi-cylinder machine will trim 142". Various machinery required to equip the mill had not been decided at the end of November. To be completed in the late fall of 1955, the mill will represent an investment in excess of \$1,500,000.

S. J. Kalop, head of the company, also heads Quaker Container Co.



\*A paper presented by Swenson before the Second Annual Pulp and Paper Conference.

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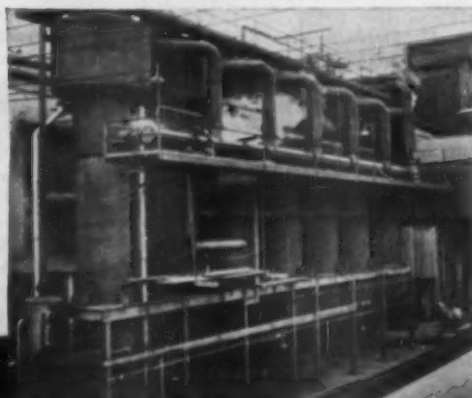
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Send now for this recently published 5-page paper\* on kraft black liquor evaporation. It provides information on the design and operating principles of the long tube film-type evaporator as applied to the evaporation of kraft mill liquor. Included is a discussion of the causes of operating problems with evaporators as well as their auxiliary equipment. Be sure to send for this important report today!

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Photograph illustrates a recent Swenson septuple effect evaporator in a west coast mill. Let Swenson, with more than 90% of the septuple effect evaporator installations, show you how to obtain steam economies in the range of 5.5 to 6.0 lbs. of evaporation per pound of steam.



**Looking Over a Digester and a Diagram**

PROGRAM PARTICIPANTS examine cut-away mockup digester in picture at left. (L to r) Moderator P. S. BILLINGTON, Development Dept., Pulp Div., Weyerhaeuser Timber Co., Longview; KENNETH M. SHOLD, Tech. Asst. to Kraft



Mill Supt., Crown Zellerbach, Port Townsend; JOSEPH L. McCARTHY, Prof. of Chemistry, Univ. of Washington. At right, l to r: GEORGE HANSEN, Chief Chemist, Weyerhaeuser Kraft Mill, Everett; T. L. KELLEY, West Sales Mgr., Tracerlab, Richmond, Calif. They presented papers on odor control in Weyerhaeuser mills and uses of radio-isotopes.

## What Coast Mill Learned About Corrosion

With emphasis on the "as yet unknown" aspects, papers delivered at Longview, Wash., in January indicate the industry's prospective advancement, particularly along the lines of materials utilization and cost reduction.

This winter session of Pacific TAPPI was conducted by Vice Chairman John M. McEwen, technical director, Weyerhaeuser's kraft pulp mill, Everett, in the absence of Chairman Ed Nunn, recently promoted to manager of Crown Z's Carthage, N. Y., plant. P. S. Billington, Weyerhaeuser Pulp Division researcher, Longview, was moderator. Over 200 attended.

In contrast to the other participants, George A. Hansen, chief chemist, Weyerhaeuser Everett kraft mill, discussed functional systems already installed. His paper, co-authored by C. G. DeHaas, also Weyerhaeuser, treated on installations at Springfield and Everett kraft mills which virtually eliminate odor problems (see PULP & Paper's especially prepared article and new pictures on these installations elsewhere in this issue). At Springfield flue gases are burned in a furnace installed for this purpose; at Everett they are oxidized with bleach-plant chlorination stage effluent.

Dr. J. L. McCarthy, University of Washington, discussed findings developed through the school's pulp mills—financed and sponsored waste research project. Regarding spent sulfite liquor, he reports encouraging results concerning (1) methods for recovering heat and process chemicals, (2) characteristics of contained lignin, and other components, with view to developing uses for them.

**PORT TOWNSEND'S CORROSION FINDINGS**—Results of efforts to arrest dome corrosion in lined digesters were reviewed by K. M. Shold, technical assistant to kraft mill superintendent, Crown Port Townsend, Wash. This mill, which pulps Douglas fir, hemlock and cedar, has nine 2500 cu. ft. digesters. Eight are factory Smith-lined by A. O. Smith Corp. (No. 347 stainless and/or Inconel) electric welded and stress relieved; one is unlined. Corrosion in the line vessels has been "cornered" in the knuckle area; cones and shell courses remaining corrosion free.

Measures taken to date—lowering liquor distributing ring, installing dome shields, trying corrosion resistant coatings, etc.—have resulted in no apparent improvement. Based on experience at this mill, Mr. Shold attributes continued dome activity chiefly to corrosive kraft cooking gases and raises these questions:

- (1) Can these gases stratify in the vapor zone or selectively condense on particular areas?
- (2) Can they be purged by a jet of steam or by increasing the volume of relief so as to rid the digester of them before they can do harm?
- (3) Should dome area be continuously showered with alkaline liquor to protect it from the corrosive gases?
- (4) Can some of these gases exert their acid characteristics even under the strong alkaline condition of a kraft cook?

Incidentally some tricky but smooth assembling work was done at Port Townsend on the new A. O. Smith digesters by Hydraulic Supply Co.,

using a monorail to "shoe-horn" them in a tight area.

T. L. Kelley, Western sales manager of Tracerlab, Inc., Richmond, Calif., discussed radioisotopes and their application to the industry.

"Companies that have acquired the skills to utilize this tool are finding new applications every day, sometimes to improve an existing method, sometimes to solve problems which cannot at all be solved by other methods," he said. Radioactive materials are used as radiation sources for radiography, level and thickness gauging; as tracers in laboratory and plant tests to provide such data as fiber distribution patterns, flow rates and patterns, and degree of mixing.

Atomic power and equipment needed for its future development were discussed after dinner by Prof. Kenneth Davis, of Reed College.

### Reliance and Reeves Merge Mfg. and Sales

J. W. Corey, president of Reliance Electric & Manufacturing Co., and Carl M. Reeves, president of Reeves Pulley Co., announced an agreement to merge the manufacturing and sales of their electrical equipment and variable speed drives.

These drives have been made by Reeves since 1880. Reliance started with an adjustable speed electric motor and now is one of the largest producers of electric motors and electronic-controlled drives.

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## How Mills Rate in Safety in Far West

● Rayonier, Inc., Olympic Division, Shelton, Wash., again led 37 divisions of the Pacific Coast Association of Pulp & Paper Manufacturers in safety during 1954 with a perfect record. It was revealed at the California joint labor-management safety conference of the association in San Francisco. This Olympic division, as of Dec. 31, had 1,205 continuous days without any disabling injuries to 135 employees.

The Vernon Division of Fibreboard Products, Inc., Los Angeles, won second place and led all mill manufacturing operations with a frequency of 1.55. First injury at Vernon during the year broke a string of over 1,000-000 accident-free hours. The Shelton, Wash., Division of Rayonier Inc., won third place in a close contest with California Container Corp., Los Angeles, with a frequency of 2.20.

The total association membership's frequency for 1954 of 6.31 disabling injuries per million man hours is substantially below any previous year.

"Although mills in Oregon continued to lead the other two states with the lowest injury frequency rate of 5.66, it was the only Pacific Coast state which did not succeed in achieving a reduction from 1953. California mills accomplished the greatest reduction of 44% below their 1953 rate," said S. W. Grimes, association secretary.

For a five-year period these are the Coast's "Big Ten":

### FIVE YRS.—1950-54 INC.

	Thousands of Man Hours	Frequency rate
1. Rayonier, Olympic Div., Shelton	1,205	.78
2. Fibreboard Products, Vernon	6,307	2.89
3. Crown-Zellerbach Corp., Camas	29,801	4.81
4. Crown-Zellerbach, Port Townsend	7,076	5.08
5. Publishers' Paper, Oregon City	7,693	5.21
6. St. Helens Pulp & Paper, St. Helens	6,571	5.38
7. Fibreboard Products, South Gate	2,725	5.50

8. Crown-Zellerbach, West Linn	13,891	5.54
9. Rayonier, Port Angeles	6,059	5.76
10. Longview Fibre, Los Angeles	2,594	5.78

P. D. Van Der Meulen, Fibreboard Products, Inc., Stockton, Division, was chairman at San Francisco.

Opening address for management was by P. T. Sinclair, vice president in charge of manufacturing, Crown Zellerbach Corp., San Francisco, who stressed the importance of safety to all concerned. R. E. Daggett, vice president, I. B. of Papermakers, Utica, N.Y., spoke for labor.

Ross Trieman, superintendent, grocery bag department, Crown Zellerbach Corp., San Leandro, said the supervisor is responsible to the people in his department, and it is he who should introduce a safety program and get his department active in safety work.

Prof. Louis Davis, University of California, spoke on the psychological aspects. At the banquet, A. E. Brown,

### 1954 YEAR SAFETY LEADERS ON PACIFIC COAST

	Man-Hrs.	Frequency Rate
Rayonier, Olympic Div. . . . .	281,313	0
Fibreboard Prod., Vernon . . . .	1,290,050	1.55
Rayonier Mill, Shelton . . . . .	909,873	2.20
Calif. Container, Los Angeles . . . . .	754,293	2.05
Coos Bay Pulp, Empire, Ore. . . .	330,116	3.03
Weyerhaeuser Pulp Div., Everett . . . . .	1,293,349	3.09
Fibreboard, San Joaquin Div. . . . .	1,112,864	3.50
Publishers' Paper, Ore. City . . . . .	1,500,720	4.00
Weyerhaeuser Pulp, Springfield . . . . .	656,354	4.57
Pac. Coast Paper Mills, Bellingham . . . . .	435,296	4.50
Fibreboard, Antioch, Cal. . . . .	2,150,240	4.65
Crown Zellerbach, Camas . . . . .	5,194,067	4.81

(27 member operations had under 10 frequency rate; two worst rates 27.5 and 29.6, both small mills, and all others were under 19)

vice president, I. B. of Papermakers, Portland, Ore., was toastmaster.

On the second day W. R. Beasley, plant manager, Fibreboard Products, Inc., Stockton, stressed human attitudes on a safety program, and gave the approach of a plant manager to safety. A panel of safety captains from various companies was heard from. A chalk talk by R. M. Gilmore, general safety supervisor, Rayonier, illustrated the importance of safety. Then another panel answered questions on safety problems.



### Cowie Represents East Texas; Russ Hudson Takes Calcasieu Post

DOUGLAS B. COWIE (left), is new Western Sales Rep. for East Texas Pulp & Paper Co., and has opened new offices at 228 No. LaSalle St., Chicago (phone RAndolph 6-1068), as announced by C. H. Morian Jr., Gen. Sales Mgr. Eastex ClO, bleached market kraft pulp and a full line of bleached and semi-bleached foodboards and kraft specialties are products. Mr. Cowie was born in Belleville, Ont. He took paper courses at Maine University. He was Western Mgr. for Hollingsworth & Vose. He is 34, married and has 3 children.

RUSSELL T. HUDSON (right), has accepted a post as Vice Pres. and Gen. Mgr. of Calcasieu Paper Co., Elizabeth, La., 200-tons-a-day kraft pulp and paper mill. It has two Fourdriniers (160-in. Pusey & Jones and 120-in. Beloit), making wrapping and converting. Mr. Hudson graduated from Louisiana State U. in 1941 and has been with International Paper and more recently was Asst. Paper Mill Supt., Union Bag & Paper Corp., Savannah. He returns to his native state, as he was born in Callion, La. C. G. McGehee heads the Calcasieu company and a Florida paper firm which it supplies.

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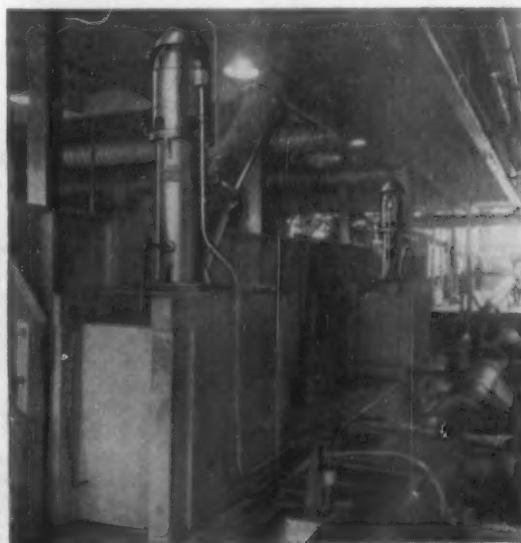
Bingham "Even-Flo" Pumps are being used effectively in the Pulp and Paper industry for such services as: Primary and Secondary Screen Transfer • Seal Pits for Barometric Legs • White Water and Stock Chests • Mill Sawage and Waste Liquor Sumps • Sludge Collecting Chests • Acid Sumps • Fan Pumps • Washers • Save-Alls

A battery of "Even-Flo" Pumps installed for screen transfer service. The non-pulsating, even rate of discharge, which is a characteristic of these pumps, increases flat screen production as much as 30%.

The BINGHAM "Even-Flo" Pump discharges pumpage with an even, non-pulsating flow, regardless of whether it is pumping at full or fraction of capacity. The *evenness* of discharge is not affected by surges in supply to pump sump. Maintains constant liquid level in the pump sump, regardless of variation in incoming supply.

The "Even-Flo" pump also handles liquids containing entrained air at the same uninterrupted, even rate of flow, without becoming airbound.

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VANCOUVER, B.C., CAN.

# New Facts on Tree Growth in South

Data on age groups and specific areas as revealed at Atlanta meeting of Southern Conservation group

• Pulpwood supplies in many areas in the South show promise of meeting demands of the expanded pulp and paper industry revealed by the Stanford Research Institute study of 1975 requirements, based upon marked increase in young tree stands resulting from improved forestry practices, including fire protection.

Revealed from U.S. Forest Resurvey studies, this situation served as a back-drop to demands by leaders at the Southern Pulpwood Conservation Association annual meeting at Atlanta that non-member as well as member mills unstintingly support the organization's program.

Florida, Georgia and South Carolina, reported E. L. Demmon, Southeast Forest Experiment Station director, should be using about one-third more wood by 1975 than they did at the time of the resurvey, of both pine and hardwood. The Institute's estimate indicates that in 1975 pulpwood in the Southeast will make up almost half of the pine draft and a fifth of the hardwood drain. There is little question that this requirement can be met if progress continues in forestry practice.

Merchantable sawtimber stocks in both pine and hardwood in the three Southeast states declined between surveys yet in Georgia's coastal area pine stock of 5 in. dbh and above increased 19%, while Piedmont area stock declined 20% and mountainous areas declined 29%. In softwoods, stocking of sound trees per acre in 5.0 to 8.9 in. increased 24%; those 9.0 to 12.9 in. increased 8%; larger sizes declined. Commercial forest land increased by 3,469,000 acres, mostly by natural reseeding of abandoned farm lands. Of this total, 2.9 million acres were in Georgia's Piedmont and South Carolina. Since 1935, a million acres were planted to pine in the three states.

Comparisons already available from resurvey in Alabama, Mississippi, Arkansas and Louisiana, reported P. R. Wheeler, of the Southern Station, disclosed that largest increases in pulpwood size timber during the next decade or so will probably occur in most of Alabama except the northernmost part, in northwest and southwest Louisiana, and in south and central Mississippi. There will be no immediate changes for the better in northernmost Alabama or northeast Mississippi,



**KEN TROWBRIDGE** (left), a graduate of University of Washington (Seattle) forestry school, but "transplanted" to South many years, where he heads North Carolina Pulp's woodlands, is new President of SPCA.

**T. W. EARLE** (right), Gair Woodlands President, who told Atlanta meeting a good sign is increasing interest of dealers in good forest practices.

## New Officers Named

K. S. Trowbridge, North Carolina Pulp Co., was chosen SPCA president for 1955. M. W. Sentell, Southern Advance Bag & Paper Co., was named vice president.

District directors: 1st—C. Y. Townley, Champion Paper, Earl Porter, International, H. A. Maas, Southland Mills. 2nd—Guy Curtis, Gaylord, L. D. Hall, International, and John Fitzpatrick, Gulf States. 3rd—J. J. Armstrong, Union Bag, M. G. Rawls, St. Regis, and C. H. Niederhof, West Va. Pulp & Paper. 4th—J. B. Lattay, Riegel Woodlands, D. E. Hess, Glafelter, and R. R. Edgar, Bowater Southern.

R. Vance Miles, Jr., Gulf States Paper Corp., will serve as director at large.

Area chairmen: 1st—C. G. Snider, Camden, Ark.; 2nd—Joe Brewster, Pensacola, Fla.; 3rd—Clark Mathewson, St. Marys, Ga.; and 4th—J. H. Johnson, West Point, Va.

Summer field meetings are set for Hotel Oglethorpe, Savannah, Ga., May 3-4; Hotel San Carlos, Pensacola, Fla., May 10-11; Hotel Washington-Yorree, Shreveport, La., May 17-18. The 4th district was not set.

pi, with likelihood of small changes in other resurveyed areas.

Southwest Alabama's count of softwood trees from 1935 to 1953 showed a rise in number in the 2 in. class from an original 300 million to 400 million; in 6 in., from 78 million to 118 million; in 16 in., from 5.6 million to 6.6 million. In volume (for example), the 6 in. class rose from 1.75 million cords to 2.75 million cords;

16 in., from about 3 million cords to almost 3.5 million cords. However, harvesting reduced the 20 in. class by two million cords. Generally, the 2 to 18 in. classes increased; larger sizes decreased.

North and southeast Alabama showed increases in 2 through 8 in. classes, with decreases in larger diameters. In the southeast the 2 in. stand increased 140%; the 4 in. class, 80%.

Mississippi's softwood stands in 2 to 6 in. classes increased; sizes above that decreased. The south Mississippi area looked best.

Dominated by half a dozen paper mill and lumber companies, softwood stands in southwest Arkansas east of the Ouachita river increased 17% while those west of the stream decreased 25% between 1934 and 1951. For the entire area 2 in. class increased, 4 through 14 in. decreased, and there was an increase in 16 in. and up credited to ownership. In the Ouachita mountain area, with an older management pattern, there were minor increases and decreases in classes from 2 through 16 in.

Large ownership management in northwest Louisiana is credited with a similar overall condition there in 1954 compared with 1933. Southwest Louisiana, in 1935, remained in the cutover stage with scant stands. Small softwood stands are now up with promise of early softwood volume. The 8 in. class experienced a slight decrease but 10 to 18 in. classes increased.

In the "Florida" parishes east of the Mississippi and north of Lake Ponchartrain, dominated by large company management, the first survey reflected a pretty fair young stand. In 1953 much of this was favorably reflected in the classes from 10 through 18 in.

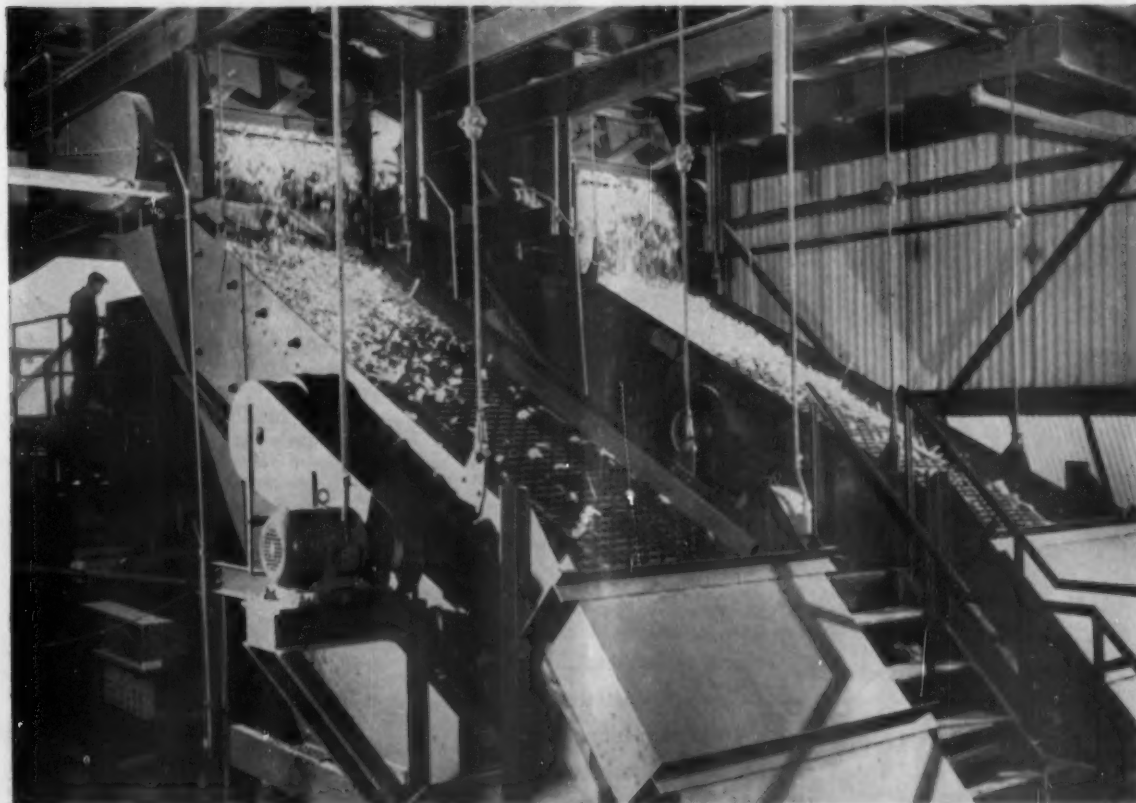
Mr. Wheeler's report covered almost 90 million of the 100 million acres of commercial acres in the four states.

Resurvey work is continuing in states not covered by the two reports.

**A BIG JOB IS AHEAD**—R. Vance Miles, Jr., Gulf States Paper Corp., as association president, laid stress on the fact that the Stanford report indicated "we have our work in forestry cut out for us in the next 20 years to

# NO SLIVERS... NO SAWDUST

## when you screen chips with a LINK-BELT "CA"

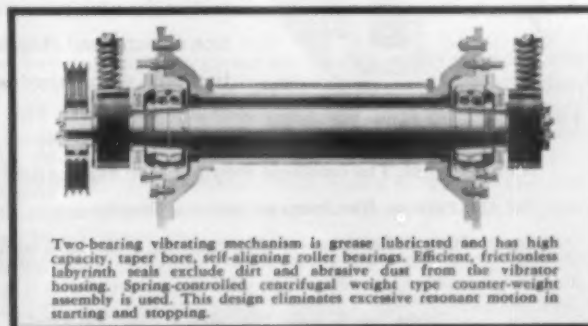


Note how quickly the heavy chip load is cleared by these two Link-Belt 4 x 12 ft. "CA" Vibrating Screens in a Florida paper mill.

### Concentric Action Vibrating Screen assures high capacity, low cost

FOR high-volume separation of slivers and sawdust from chips, you'll find Link-Belt "CA" Vibrating Screens can't be beat. That's because Concentric Action Screens impart positive, uniform, circular motion to every square inch of each deck. Lively tumbling action achieves bed stratification fast—gives each particle maximum sizing opportunities.

What's more, efficient two-bearing operation cuts power requirements, minimizes maintenance. In sizes from 4 to 6 ft. wide by 8 to 14 ft. long... single, double or triple decked—there's a Link-Belt "CA" to match your chip screening requirements. For complete information, call the Link-Belt office near you or write for Book 2554.

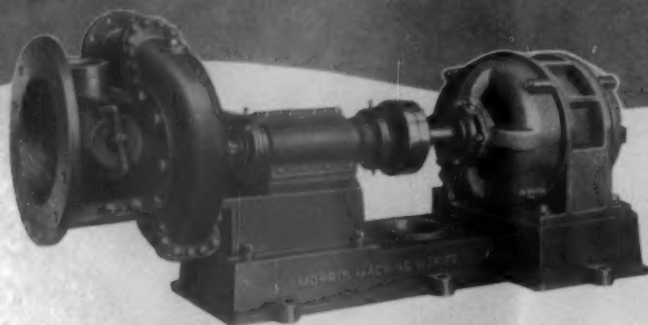


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VIBRATING SCREENS



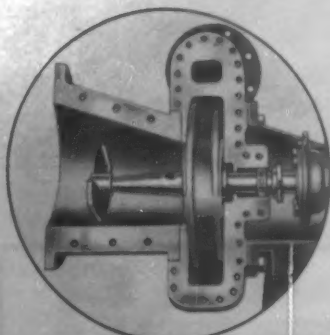
LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.

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### **MORRIS** Type ST-P STOCK PUMP

Handles clean stock of extremely high consistency — up to 8% — without pulsating flow, dehydration or clogging.



View showing suction booster and impeller

Morris' patented suction booster mechanically agitates and propels the stock into the impeller eye. The eccentric configuration of the suction nozzle combined with the axial flow action of the suction booster prevents extraction of water and clogging of suction pipe with dehydrated fibre.

Another point. The resultant constant feed assures flow throughout the system, free from pulsations. Steady action helps keep down shaft deflection — holds packing wear to a minimum.

Write for Bulletin 176, giving sizes, capacities and engineering data.

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**MORRIS** Centrifugal Pumps

meet the 30 million cord consumption predicted for us in 1975."

Frank Parham, Gulf States Paper, said his company furnishes story and cuts for good management newspaper stories. After the first story, editors report owners volunteering to talk about their success.

Stick to facts, keep the story short, and if you can't write, train yourself to have the facts summarized at finger-tip to tell your story orally to a newspaper reporter, said Kirk Sutlive, Union Bag & Paper Corp.

Henry J. Malsberger, SPCA for-ester-general manager, said consulting service during 1954 reached 7,748 owners of 5,000,000 acres compared with 5,681 owners of 5,716,300 acres in 1953, reflecting success in interesting the smaller woodland owners in management.

Policing of cutting practices by member mills on non-company lands during 1954 reflected improved practices. In 1954, clearing cutting and "land clearing" dropped 6%, the change being in favor of a 3% increase in seed tree cutting and a like percentage in thinning. Cutting practices on company and non-company lands during 1954 showed that 63% of total wood consumed was harvested according to approved practices.

T. W. Earle, president, Gair Woodlands Corp., lauded the interest shown by pulpwood dealers, many of whom are participating in the conservation effort.

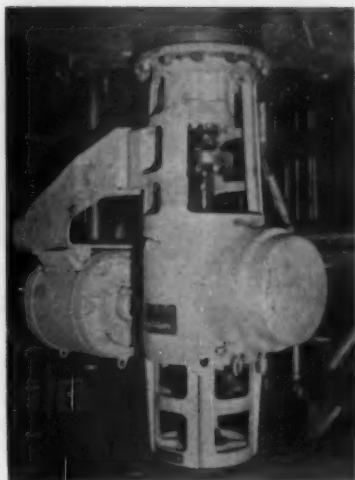
Dissatisfaction with rate of progress and failure of some Southern mills and shippers to carry their part of the load though enjoying the benefits of the Association's work was voiced by J. E. McCaffery, vice president, International Paper Company (34 mills are members, consuming 80% of pulpwood in the South).

#### Marquand, Famous Author, Serves on Hooker Board

John Phillips Marquand, author of Pulitzer prize-winning novel, *The Late George Apley*, and others such as *Point of No Return*, *B. F.'s Daughter* and *So Little Time*, is continuing to serve on the board of directors of Hooker Electrochemical Co., its 50th anniversary annual report shows. His residence is Newburyport, Mass.

#### New Fibrepulper At Burrows Paper Co.

A new 3B2 Downington Fibrepulper has been placed in operation at Burrows Paper Co., Little Falls, N.Y., to prepare stock for fine tissue paper. On the side of a steep hill, the mill is served by a railroad siding at the fourth floor where stock is charged into the Fibrepulper on the third.



#### **New Seal in Fluid Mixers Reduces Maintenance**

A new rotary mechanical shaft seal in an easily-replaceable cartridge assembly has been announced by Mixing Equipment Co., Inc. of Rochester, N. Y. The accompanying picture shows a mill installation of its top-entering Lightning Mixer, with new double mechanical seal, on a pressure vessel.

The new seal is now available, in either single or double types, on all models of Lightning Mixers where shaft sealing is required, and in a variety of materials to suit any mixing conditions.

Positive, leakproof sealing of tank liquids, vapors or gases is provided by the new seal. Unlike a packed stuffing box, the seal never requires adjustment while in service. Field tests have shown that the seal can be expected to give years of trouble-free service under normal conditions.

The new seal is assembled in a cartridge as a single component. Anyone, using only a wrench, can easily uncouple and remove the assembly, and replace it, in a few minutes.

The Lightning single seal assembly is used where sealing faces are lubricated by tank contents, and where service conditions are not severe.

The double seal, as in picture, is applied where tank contents will not lubricate sealing faces, where they contain abrasives, or under conditions of high temperature or pressure.

Additional information can be obtained from Mixing Equipment Co., Inc., 158 Mt. Read Blvd., Rochester 11, N. Y.

#### **New Record For Crossett Paper Machine**

Operating continuously without a break for 8 hours and 24 minutes, the "Pioneer" Fourdrinier machine at Crossett Paper Mills, Crossett, Ark., recently maintained a speed of 2,024 feet per minute on 30 lb. paper, according to James C. Hair, mill manager.

Designed for a 2,000 fpm, this Beloit machine, equipped with a vacuum pick-up arrangement, was put into operation Jan. 17, 1950. Its former record was 1,935 fpm on kraft wrapping.



The Signode engineer can show you how to cut costs with the latest and most efficient tools, such as the A-34 strapping machine, shown in use here.

## **Consult the men who make paper behave —Signode Industrial Engineers!**

Paper shippers have come to expect exceptional results from Signode engineers. They have learned that in addition to personal knowledge, training and experience, Signode engineers have access to every modern facility for making laboratory and field tests that improve packaging, handling and shipping.

You can expect to find new ways to save money, reduce damage, and deliver more satisfaction to your customers through a check of your operations by a Signode man.

If shipping costs, loss and damage claims and customer complaints are rising, it is time to consult a Signode industrial engineer. To make a date, write Signode Steel Strapping Company, 2672 N. Western Ave., Chicago 47, Ill.

# **SIGNODE Steel Strapping Co.**

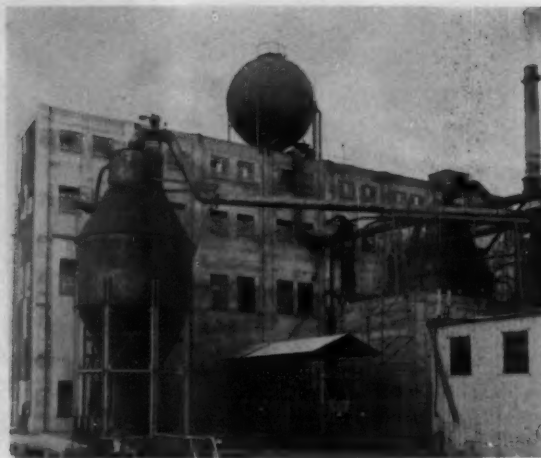
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**New Vaporsphere in use at Everett mill**

Round steel ball surmounting digester building (center of picture) is the Vaporsphere. This was the first one, installed at Weyerhaeuser kraft pulp mill in Everett.



**Here is Vaporsphere at Springfield**

Even casual observers note difference at Weyerhaeuser's Oregon kraft mill with this Horton Vaporsphere abating process odors. It is ball on top of digester house.

## A New Way to Reduce Kraft Odors

Two-phase system proves successful at two Weyerhaeuser mills, and also contributes to production savings

● As a direct result of some five years work by research department and plant personnel, Weyerhaeuser Timber Co., Pulp Division, has substantially reduced noxious gas odors emanating from its kraft mills in Springfield, Ore., and Everett, Wash.

Odor abatement at each mill consists of two separate phases—one disposes of the sulfurous compounds from cooking gases and the other eliminates the normal discharge of hydrogen sulfide from recovery furnace stack. The latter also contributes to production economies.

Regarding effectiveness of the program, J. O. Julson, mill manager at Springfield, told PULP & PAPER it has reduced the amount of odors discharged to the atmosphere.

"This is best illustrated," he said, "by the many statements made by people in the area who have remarked on the improvement. A great deal of effort has been put into this along with the expenditure of a sizable sum of money. Original research in our laboratories was coupled to investigations made by others around the world to form the basis of engineering design. It is gratifying to Weyerhaeuser Timber Co. that the results are positive."

Most of the pioneer installations and studies of this program were carried on at the Springfield plant by

Research Department and plant personnel. Subsequent to proving out there, somewhat similar installations were made at the new Everett plant. Except for the final disposal of non-condensable cooking gases, the installation at each plant is quite similar. At Springfield the cooking gases are burned but at Everett, where bleach plant effluent is readily available, the odorous cooking compounds are disposed of chemically.

### HOW VAPORSPHERE WORKS—

The most obvious factor of the control system at either mill is a 27-ft. diameter steel ball, mounted on top of the digester building, which can be seen from all directions. This hollow steel-shelled Horton Vaporsphere, built by Chicago Bridge & Iron Co., collects foul cooking gases, maintains them under light pressure and evens out the flow.

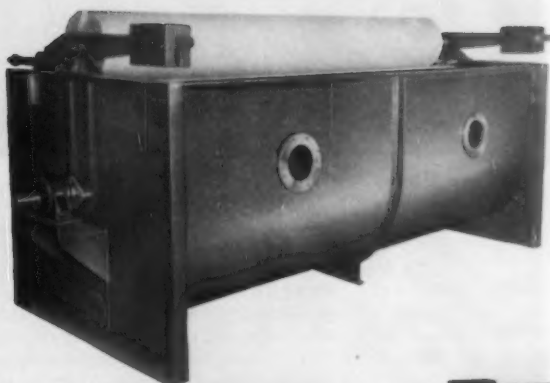
A gas-tight center-weighted dia-



**Inspecting Gas Flow Controls**

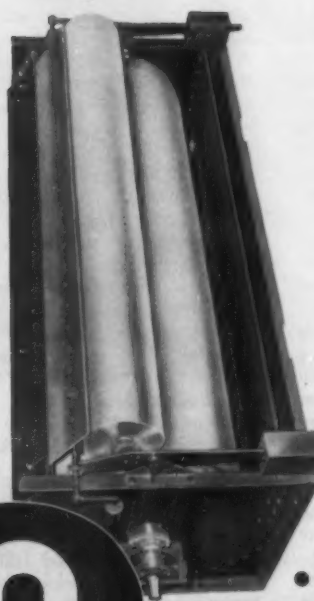
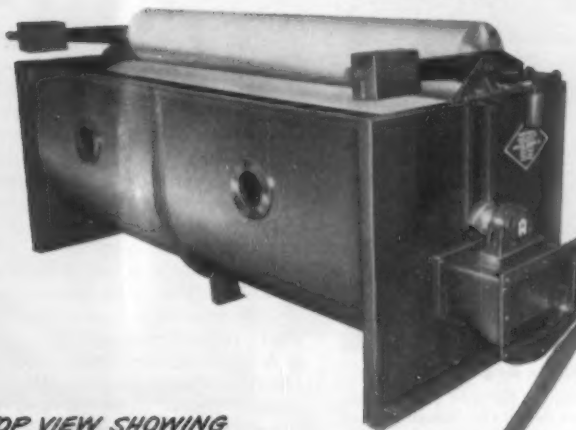
DON COOPER, Project Chemist at Springfield, inspects Foxboro Instruments controlling gas flow between Vaporsphere and disposal furnace. He served as liaison between engineering and technical groups on project.

**ANY WAY YOU LOOK AT IT...**



*VIEW OF END  
AND INTAKE SIDE  
OF COWAN DECKER*

*VIEW OF EFFLUENT  
DISCHARGE END FROM  
INTAKE SIDE*



*TOP VIEW SHOWING  
RUBBER-COVERED  
COUCH ROLL AND 48" DIA.—  
131" CYLINDER MOULD*



**...the Cowan Decker  
shows its superiority!**

**COWAN DECKER PRODUCTION FIGURES:**

35 tons/day — Groundwood  
85 tons/day — Sulphite  
100 tons/day — Kraft



Exclusive U.S. licensee for Cowan Deckers



#### Where Gases Flow to Vaporsphere

Flow gases at Springfield from jet condenser at far right, through 28 in. iron pipe to the Vaporsphere, out of picture at left.



#### Where Gases Are Destroyed

Anthony horizontal furnace in Springfield mill which destroys noncondensable foul cooking gases. Although designed to burn oil, it now operates on turpentine recovered from cooking gases.



#### Where Sulfides Are Stabilized

Oxidation tower, at far side of the foam tower, stabilizes sulfides by bringing black liquor and air intimately together. Hydraulic Supply Mfg. Co. of Seattle built both towers. Northwest Copper Works, Portland, Ore., provided stainless steel packing for oxidation tower.



#### Cutaway View of Vaporsphere

Cutaway view shows inner flexible membrane of Horton Vaporsphere. Membrane is connected to shell at equator and temporarily stores and smooths out flow to furnace of non-condensable cooking gases.

phragm, made of coated fabric and shaped somewhat like the top of a parachute, fastens to the inside of the shell about half way up the sides of the sphere.

Slight pressure, of approximately 1-in. water, is maintained throughout the system by weight of the fabric diaphragm. The pressure varies but little regardless of the amount of gas contained in the Vaporsphere. As the amount decreases it is confined in space of smaller diaphragm contact area. As volume increases, the diaphragm weight spreads over a larger area and the pressure remains practically constant in the system regardless of quantity of gas in this 10,000 cu. ft. capacity reservoir.

A small stainless steel cable leads from the diaphragm via pulleys to a marker which rides up and down along a vertical trackway. The marker descends as gas thrusts the diaphragm upwards and ascends as the diaphragm descends.

Odorous compounds generated by the chip-cooking process reach the Vaporsphere by two routes—the blow cycle and relief system.

Relief gases from digesters pass through two over-size condensers and then to a "rock pot"—a 500-gal. steel tank, gravel packed and water-sprayed—which acts as an auxiliary condenser and collects heavy turpentine fractions. Non-condensable gases flow from there to the Vaporsphere through 6-in. black iron pipe.

Blow gases, rather than discharging through a vomit stack, flow from the jet condenser to the Vaporsphere through a 28-in. black iron pipe.

**SAFETY FACTORS**—The Vaporsphere, acting as combination gas flow-evener and reservoir, has capacity for accommodating tremendous surges of blow gases without overloading. However, because of the combustibil-

ity of the gases and restricted pressure range, safety factors have been liberally incorporated throughout the system. Three Chicago Bridge combination pressure-vacuum breakers in the gas disposal system provide protection against both over- and underloading. A hinged lid closing off discharge of the vomit stack is precisely weighted so it will open if the pressure should approach upper limits of the safety range.

The 28-in. pipe carries approximately 5000 cu. ft. of non-condensable gas and steam from the jet condenser to Vaporsphere per blow. A large share of this gas is re-cycled back to the blow tank to replace steam as it condenses and stock as it is withdrawn to the washers, so that only about 600-800 cu. ft. of non-condensable relief and flow gases have to be disposed of per cook.

From the Vaporsphere the gas feeds through an 8-in. black iron pipe tapering to 4-in. diameter at a Foxboro metering valve which measures and controls rate of flow to an Anthony furnace where it is burned. Enroute the gas is diluted 1:20 with air and the air stream velocity sufficiently increased to exceed the speed of flame propagation through the system's flame arrester located just ahead of the Anthony furnace.

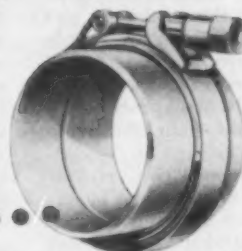
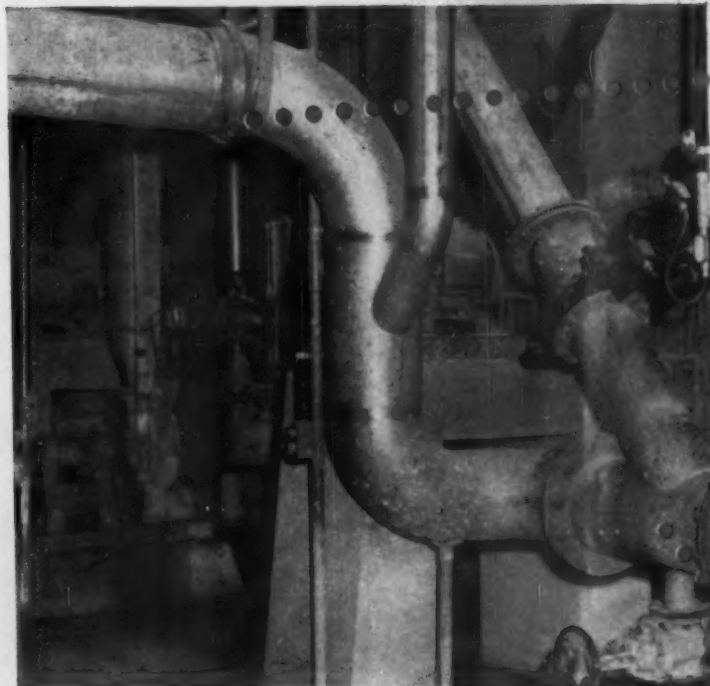
This horizontal, brick-lined unit is automatically controlled by Wheelco instrumentation keeping temperatures normally within the range of 900-1200° F. Although the furnace was designed to burn Bunker C oil, and operated on that fuel when first installed, turpentine recovered in the process is now utilized as fuel in the furnace.

According to Don Cooper, project chemist actively engaged in the odor abatement project at Springfield since its inception, using the by-product

Complex piping problems easily solved with "Standard"

# TRI-CLOVER

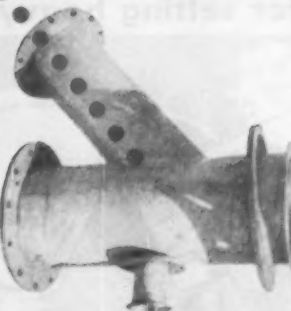
## STAINLESS STEEL FITTINGS



Application of Tri-Clover's new Stainless Steel Schedule 5 and 10 and Tube O.D. TRI-CLAMP Fitting for fast, easy assembly of corrosion-resistant lines.

● Shown here are part of the stainless steel fittings manufactured by Tri-Clover to meet the requirements of a large Midwest Paper Company. The units shown above are part of the Vortrap assemblies, and include Tri-Clover "standard" stainless steel fittings to provide maximum corrosion-resistance.

Experience and craftsmanship make the big difference in the production of long-lasting, fully corrosion-resistant fittings. That's why more and more mills and plants in the chemical-process industries are specifying TRI-CLOVER . . . for the highest quality stainless steel fittings, pipe, tubing and pumps.



"Standard" Tri-Clover Stainless Steel 45-degree Lateral Fitting designed for flanged assembly . . . one of a complete line of industrial fittings for every purpose, in sizes up to 36" O.D.

**LADISH CO.**  
*Tri-Clover Division*  
Kenosha Wisconsin

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EXPORT DEPARTMENT — 8 SO. MICHIGAN AVE.  
CHICAGO 3, U.S.A.

turpentine as fuel to break down the "negative perfume" cooking gases makes the system practically self sustaining and entirely eliminates the purchase of fuel oil for this furnace.

The turpentine fractions recovered in the system at the condensers and "rock pot" are collected in two storage tanks which serve as furnace fuel reservoir. Each cook contributes approximately 5 gals. of turpentine condensed principally from the relief gases.

Foxboro instrumentation records and controls flow of gases from Vapor-sphere to furnace and the flow of dilution air entering the system shortly ahead of the furnace.

**THE OXIDATION PROCESS**—Thus the system captures and destroys the odoriferous sulfur compounds developed from chemical cooking. To minimize noxious odors characteristic of kraft recovery systems, the company developed an oxidation process which not only keeps the normally foul gases from forming, but reduces chemical losses.

Black liquor received by No. 1 storage tank from the washers is pumped to a 14-ft. diam. by 42-ft. high oxidation tower before going to the quintuple effect long tube evaporators and subsequently to the cas-

cade evaporators. This oxidation tower, built by Hydraulic Supply Co., is filled with corrugated stainless steel packing produced by Northwest Copper Works.

Liquor enters top of the oxidation tower at rates up to 800 gpm as air is concurrently blown in at about 2,000 cfm. This arrangement provides large surface area for intimate contact between air and black liquor as both flow down the stainless corrugations. This brings about a chemical reaction stabilizing sulfides in the liquor.

Consequently the sulfides cannot be

stripped out of the black liquor when the black liquor subsequently comes into contact with carbon dioxide of the combustion gases in the cascade evaporators. The sulfides are no longer replaced with CO<sub>2</sub> to discharge from the stack as hydrogen sulfide—the foul smelling culprit noticeable to people in such dilute form as one or two parts per million. Although the process has not appreciably decreased the amount of saltcake make-up, it does increase sulfidity of the cooking liquor and makes addition of elemental sulfur unnecessary.

## Paper Chemicals Sale Team for Monsanto

• Among changes that followed reorganization of Monsanto Chemical Co. last year was establishment of paper groups in the Organic Chemicals Division at St. Louis and in the Plastics Division at Springfield, Mass.

This group is headed by H. J. (Jim) Lawler, who was transferred to St. Louis with the transfer of their facilities there from Everett, Mass. St. Louis is headquarters of the Organic Division, where a new paper laboratory was installed recently.

These other key changes were made:

John P. Bainbridge Jr. was made

technical service representative for Midwest states with headquarters in Kalamazoo, Mich., while Hugh T. Holland carries the same responsibility in Eastern states. Philip L. Slayton became sales representative in New England with headquarters in Boston; Daniel P. Shedd became sales representative of the Chicago district, residing in Appleton, Wis., and most recently Winfield E. Drown moved to Portland, Ore., as sales representative for the Pacific Northwest.

This group, along with the Organic Division sales representatives in other

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**READY  
TO  
USE**

You add only water to EMBECO PRE-MIXED GROUT to produce:

and for booklet



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- Non-shrink with full bedplate contact.
- Maintains alignment.
- High compressive and impact-resistant strength.
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EMBECO PRE-MIXED GROUT makes possible savings in time, money and labor. Provides uniformly superior results. Recommended by leading machinery and equipment manufacturers. Write for 8-page illustrated booklet on this easy-to-use product.

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of Products to Improve Concrete and Mortar

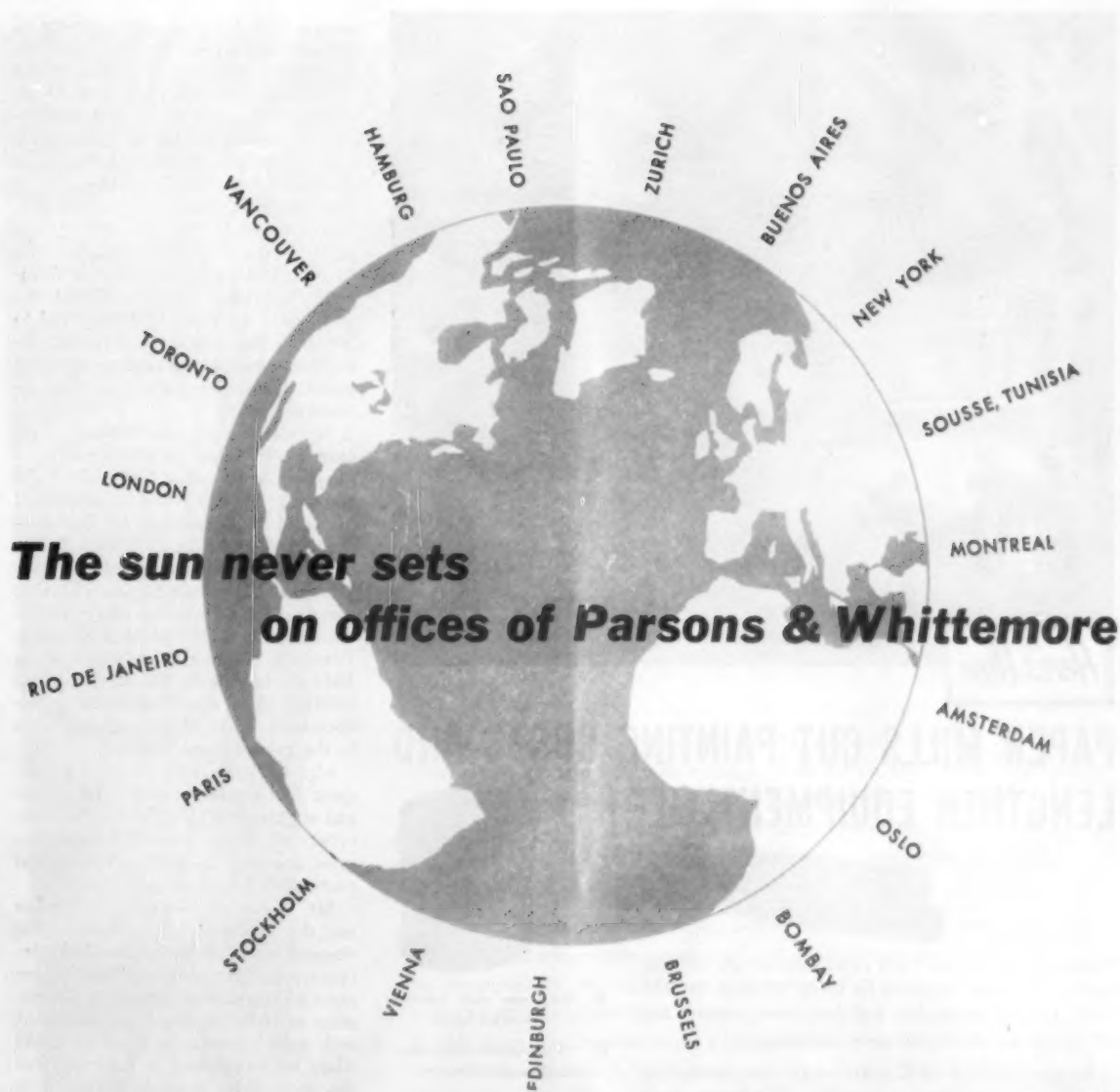


### Key Men in Monsanto's Paper Chemicals Sales

These six sales and technical service men, led by Product Sales Mgr. H. J. (JIM) LAWLER are working in important key locations of the paper industry for Monsanto paper chemicals, particularly its improved fortified rosen sizes.

Top row (l to r): MR. LAWLER, based in new paper chemicals headquarters at St. Louis; WINFIELD E. DROWN, who recently located in Portland, Ore., as Sales Representative; PHILIP L. SLAYTON, Sales Representative in Boston.

Lower row (l to r): JOHN P. BAINBRIDGE, JR., Tech. Service Rep., Kalamazoo, Mich.; DANIEL P. SHEDD, Sales Rep., based in Appleton, Wis., and HUGH T. HOLLAND, Tech. Service Rep. for Eastern states.



**for pulp  
paper  
paper-making machinery  
graphic machinery**

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**PARSONS & WHITTEMORE, 250 Park Ave., New York 17, N. Y.**



Here's How

## PAPER MILLS CUT PAINTING COSTS AND LENGTHEN EQUIPMENT LIFE!

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Paper manufacturers from coast to coast are solving the condensation problem by using Truscon SPEED REX, famous protective and decorative coating for all metal, wood and concrete surfaces.

Because SPEED REX contains Devran, an Epoxy Resin, the new miracle ingredient, it resists *hard knocks* as well as moisture and chemicals. You paint less often when you standardize on SPEED REX because rough, tough physical abuse bounces off the rugged hide of this protective coating. Send coupon for full details on paper mill maintenance.

- Only one coat needed . . . in most cases.
- 12 attractive colors plus black and white.
- Resists alkali, water, many industrial chemicals and cleaning compounds.
- May be brushed or sprayed.

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*Laboratories*  
Division of Devan & Reynolds Co., Inc.

**Maintenance Problem?**  
**TELL IT TO TRUSCON!**

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Detroit 11, Mich.

Please send me details about SPEED REX and paper mill maintenance without obligation.

NAME

ADDRESS

CITY  ZONE  STATE

areas, will bring a wide variety of organic chemicals to the industry. Particular attention is being given Monsanto's fortified rosin sizes to insure proper introduction and application of these relatively new materials.

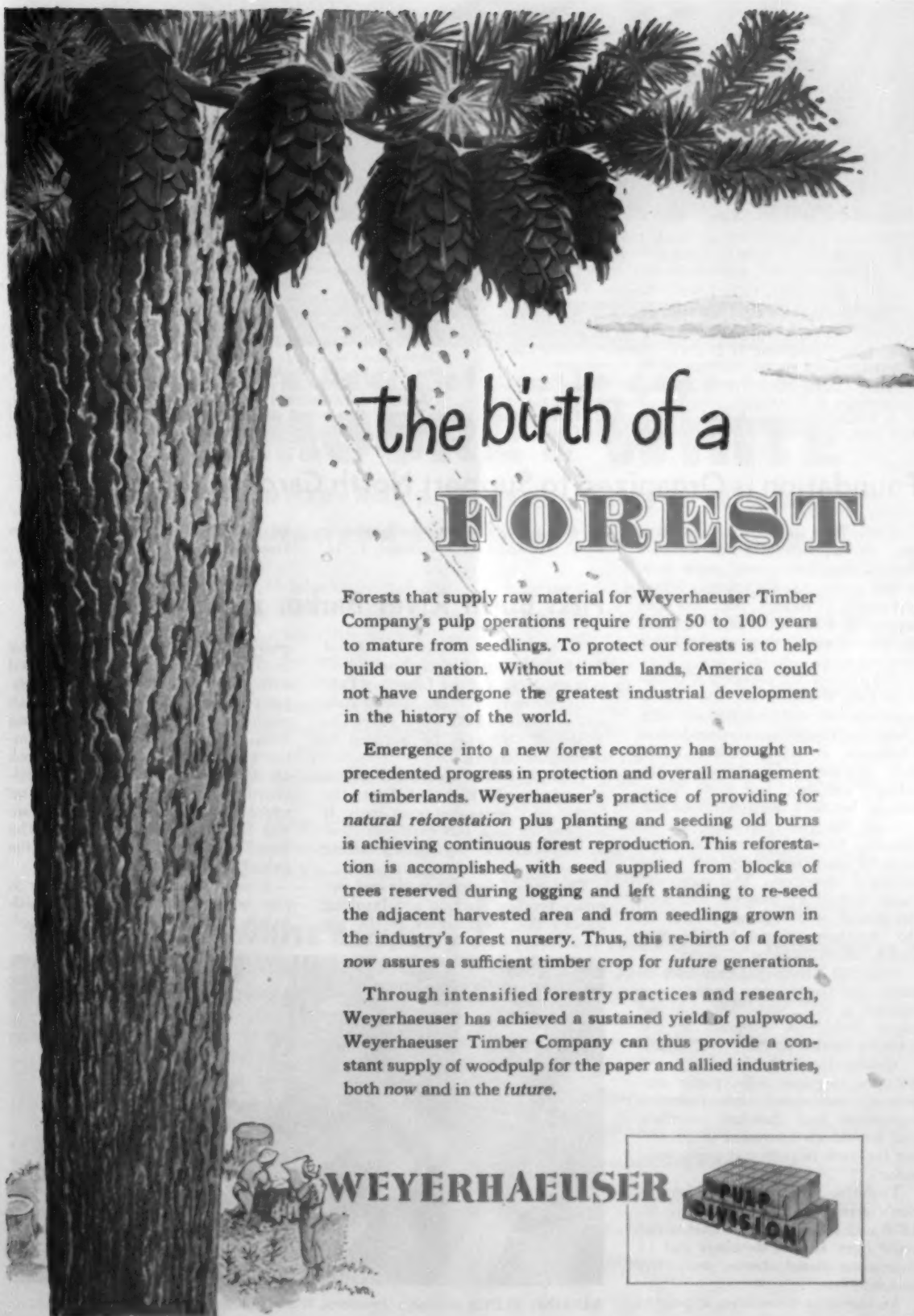
Product Sales Manager Lawler was graduated from the University of New Hampshire in 1941 in chemistry. He was a major in the U.S. Army Ordnance Corps during the war. In 1946, he joined Monsanto as research chemist in Merrimac Division laboratories at Everett. In 1947 he transferred to the Division's sales development department to help introduce fortified paper sizes. In 1950, he became manager.

Mr. Bainbridge, who worked as research chemist at Monsanto's Everett plant while attending MIT, joined the company in 1935 when he graduated in chemical engineering. He held production jobs and in 1938 went to the development department of the then Merrimac Chemicals Division. During the war, he was senior supervisor at the company's TNT plant at Karnack, Texas. He returned to development in 1944 to help with the work on the fortified rosin sizes and other paper chemicals. In 1949, he switched over to the sale of these products.

Mr. Holland, who holds B.S. degrees in chemistry (1944) and chemical engineering (1947) from the University of Maine, joined Merrimac as sales engineer in 1952 after several years with International Paper Co.

Mr. Shedd, who attended Purdue and the University of Rochester, was research associate in the chemical warfare service laboratories at MIT before joining Merrimac's research department in 1946. He was in development and sales development until 1952 when he transferred to sales and began specializing in paper chemicals in 1953. A graduate of Bowdoin College in 1944 in chemistry, Mr. Slayton joined Monsanto in 1946. After several years in Merrimac sales development he was transferred to the Organic Chemicals Division, Chicago sales office, with additional duties as representative for Merrimac. In 1953, he was named branch manager.

Mr. Drown, who joined Merrimac Division as a plant chemist in 1929, held various research, production and sales positions when he was appointed assistant branch manager of the division's New York sales office in 1943. He became branch manager there in 1945 and returned to Everett in 1949 as product sales manager. He was Merrimac's representative at Seattle, when he became a member of the paper chemicals sales group and recently moved to Portland. He graduated from Northeastern University in 1929.



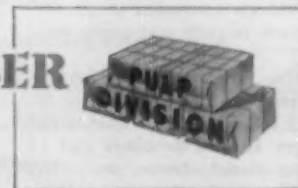
## the birth of a **FOREST**

Forests that supply raw material for Weyerhaeuser Timber Company's pulp operations require from 50 to 100 years to mature from seedlings. To protect our forests is to help build our nation. Without timber lands, America could not have undergone the greatest industrial development in the history of the world.

Emergence into a new forest economy has brought unprecedented progress in protection and overall management of timberlands. Weyerhaeuser's practice of providing for *natural reforestation* plus planting and seeding old burns is achieving continuous forest reproduction. This reforestation is accomplished with seed supplied from blocks of trees reserved during logging and left standing to re-seed the adjacent harvested area and from seedlings grown in the industry's forest nursery. Thus, this re-birth of a forest now assures a sufficient timber crop for *future* generations.

Through intensified forestry practices and research, Weyerhaeuser has achieved a sustained yield of pulpwood. Weyerhaeuser Timber Company can thus provide a constant supply of woodpulp for the paper and allied industries, both now and in the *future*.

**WEYERHAEUSER**





**INDUSTRY EXECUTIVES** at North Carolina State College meeting organize a Pulp and Paper Foundation to support curriculum in pulp and paper technology.

Seated (l to r) **PROF. C. E. LIBBY**, Director of the Pulp and Paper curriculum; **DWIGHT J. THOMSON**, Vice Pres., Champion Paper & Fibre and Vice Pres. of the new Foundation; **E. J. GAYNOR**, President, Brunswick Pulp & Paper and first President of the Foundation; **L. L. RAY**, Director of State College Foundations and elected Secretary of the Foundation.

Standing (l to r) **PROF. R. G. HITCHINGS**, Pulp and Paper Technology; **K. F. ADAMS**, Res. Mgr., Halifax Paper Co.; **DR. R. J. PRESTON**, Dean, School of Forestry; **H. D. HINMAN**, Mill Mgr., International Paper, Georgetown, S.C.; **R. E. L.**

**WHELESS**, Chief Chemist, Camp Mfg. Co.; **DR. WARD HARRISON**, Vice Pres., Riegel-Carolina Corp.; **DR. A. P. YUNDT**, Research Director, Camp Mfg. Co.; **CHARLES HUESTIS**, Vice Pres., Southern Paperboard Corp.; **I. P. SIM**, Asst. Mill Mgr., International Paper, Georgetown, S.C.; **COLIN GARDNER III**, Vice Pres., Gardner Board & Carton; **R. L. MILES**, Personnel Director, Gardner Board & Carton; **GEORGE MCCREA**, Head, Office Staff, The Mead Corp.; **HANS EGGERS**, President, Continental Can Co.; **J. A. AUCHTER**, Vice Pres., North Carolina Pulp Co.; **F. W. BRAINERD**, Asst. to Vice Pres., Scott Paper Co.; **E. H. GRAVES**, Mill Mgr., Continental Can Co.; **DR. H. Y. CHARBONNIER**, Asst. Mgr., Union Bag; **DR. L. N. ROGERS**, Director of Research, Buckeye Cotton Oil Co., and **DR. W. F. GILLESPIE**, Technical Director, Gaylord Container.

## Foundation is Organized to Support North Carolina Paper School

A new Pulp and Paper Foundation, Inc. for supporting North Carolina State College's pulp and paper technology program in the college's School of Forestry at Raleigh, N.C., has been organized. First act was to approve \$9,000 for scholarships, each \$600 a year for 4-years study.

**E. J. Gayner, III**, president of Brunswick Pulp & Paper Co., was elected president of the foundation, with **Dwight J. Thomson**, vice president of Champion, as vice president, **L. L. Ray**, director of foundations at the college, secretary, and **J. G. Vann**, college business manager, treasurer.

Dean **Richard J. Preston**, of the School of Forestry, reported bids have been let on a new pulp and paper technical laboratory. The pulp and paper technology program has been designated as a regional project by the Southern Regional Education Board, which includes 17 states.

Over 200 forestry students from 25 states and two foreign countries are enrolled at N. C. State. The pulp and paper technology program in the school is headed by **Prof. C. E. Libby**.

Membership in the foundation will be open to paper mills, paper converters, equipment manufacturers, equipment and chemical suppliers, and individuals interested in advancing the work in pulp and paper technology.

Tentative estimate of the foundation's income for July 1, 1955-June 30, 1956 was set at \$25,000. This would come from 18 mill members and 14 equipment manufacturers, converters and suppliers.

An executive committee, appointed

by Mr. Gayner, included himself, **K. F. Adams**, **C. E. Hartford**, **E. H.**

**Graves**, **H. D. Hinman**, and **Charles Huestis**.

## First Burnt River Barker in West

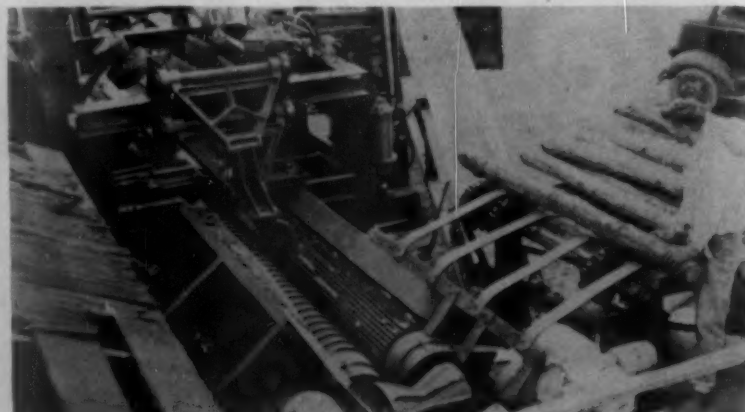
● **Sumner Iron Works** first Burnt River Mechanical Barker (Model A-1) is in production at the Coos Bay Pulp Corp., Anacortes, Wash., sulfite pulp mill subsidiary of the Scott Paper Co. A second will soon be installed to operate in tandem.

Western alder, somewhat similar to poplar in the East, is fed into the barker on a seven-day week basis. It removes all bark and cambium layer so essential for top quality sulfite chips.

There are 6 barking heads and two rotary brushes. Barking and brushing follows the irregularities of the log

easily and thoroughly. Each barking head and rotary brush may be used individually or in combination. Stoppage of any one unit does not halt production. Teeth on the barking heads are blunt, having rounded contact surfaces. These loosen and knock off the bark by a beating action followed by brushing. Two large rolls on which the log rides cause it to rotate and feed through the machine. The fluted roll (right) turns the log; the helical roll (left) feeds the log.

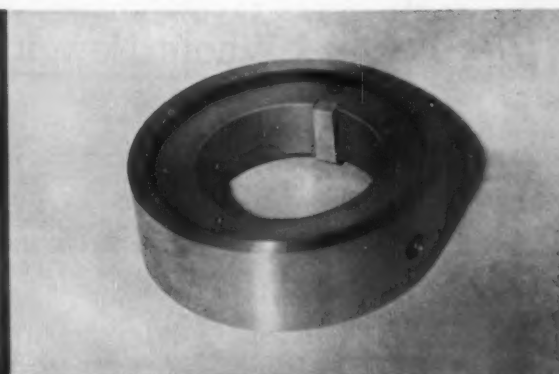
A new Sumner 112 in. chipper is also being installed at Scott's hardwood-sulfite mill at Anacortes.



**BARKING ALDER** at Scott's Anacortes, Wash., sulfite pulp mill.



The secret of perfect alignment is in the V-lock joint and the method of mounting the precision ground blade on the hub.



Moore & White split double edge bottom slitter blade mounted on hub. Note the perfect alignment of the two halves of the blade.

**Eliminate hours of costly down-time!**

**New MOORE & WHITE**

**Split Double-Edge Bottom Slitter Blades\*  
can be changed in a matter of minutes!**

Now there's no need to laboriously pull bearings and hubs to dismount lower slitter blades from cutters, winders or any other machines on which you use them. No necessity to defer sharpening past the point when it should be done for greatest efficiency, with resulting rounded edges and more metal to be removed—and undue wear on top slitter blades. Unused blades which tend to score the paper can be removed in a jiffy.

This exclusive new Moore & White development reduces from hours to minutes the costly down-time needed to detach lower slitter blades

from the shaft. Production lost from this operation shrinks to trivial proportions.

This split double-edge bottom slitter blade is precision made of high quality bearing steel, with tight V interlock. Blade and hub have ground fit. Set screw on the side of the hub is locked or unlocked by a one-quarter turn. The blade is designed for efficient use on round shafts and shafts with a flat—and there is an adjustable key to engage the keyway in shafts so built.

Answers to the questions on the coupon below will enable us to serve you promptly. Will you get it off to us today?

\*Pat. applied for.

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**The MOORE & WHITE Company**

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Please send me full information about your split double-edge bottom slitter blades, as applicable to my equipment described at right.

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Firm Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Diameter of shaft \_\_\_\_\_

O.D. of present blades \_\_\_\_\_

Type of shaft (solid or pipe type) \_\_\_\_\_

Size of keyway \_\_\_\_\_

R.P.M. of shaft \_\_\_\_\_

Type of machine \_\_\_\_\_

**REOPEN FOREST USE TERMS IN B.C.**—Chief Justice Gordon Sloan, appointed by the British Columbia government to make a new inquiry into forest administration, will conduct first sessions this spring and hopes to conclude them before the yearend. He is authorized to go into any detail of the subject he considers worth study.

One of the major questions is the forest management license system inaugurated as a result of his original investigation ten years ago. While the system has been criticized in some quarters, H. R. MacMillan, chairman of MacMillan & Bloedel, states that the \$30,000,000 expansion program of his company at Port Alberni (newsprint mill, board mill, additional semi-bleached market pulp) is the natural outcome of the license program.

Addressing shareholders, Mr. MacMillan defended the system and said that it safeguarded raw material for industry while protecting the public interest. "It is undoubtedly the most remunerative and far-sighted policy of selling timber, getting a new crop which will also be owned by the government, yet devised anywhere in North America," he said.

**NEW CONTAINER DIVISION**—Bathurst Power & Paper has announced formation of a new container division, to correlate the operations of recently acquired Canadian Wire-bound Boxes and Bathurst's two subsidiaries, Kraft Containers and Shipping Containers.

The new division, Bathurst Containers, will be headed by L. D. Richardson, Montreal, general manager.

**POWELL RIVER PLANS**—Powell River Co., Powell River, B.C., will spend \$1½ million on expansion this year, and increase annual newsprint output 30,000 tons by 1956, states R. M. Cooper, resident manager and vice president. The company plans a new \$400,000 office building.

**NEW RESEARCH ON CEDAR**—Chemical research is being carried out at the Forest Products Laboratory, Vancouver, B.C., with a view to developing processes that will enable pulp mills to make more use of cedar. Finding profitable outlets for large quantities of cull cedar and residues from sawmill and shingle operations, has presented the staff with a real challenge, according to Dr. J. A. F.

Gardner. Two chemicals in cedar responsible for accelerated kraft digester corrosion resulting from that species can be removed by a simple water process. One of the chemicals might then be useful as it is a potent fungicide.

**BACKGROUND OF PRICE RISE**—Canadian producers of unbleached market sulfite pulp hope to make their price boost of \$5 a ton stick more firmly this time. It may be recalled that towards the close of 1953 several Eastern mills announced a

similar price increase and then had to withdraw it before it actually took effect because of lack of support. This time all important Canadian producers of this grade have fallen in line. Their costs continue to climb and encouragement was given when Scandinavian mills increased their prices.

Great Lakes and St. Lawrence are said to have a surplus of saleable unbleached sulfite pulp capacity of 60,000 and 30,000 tons, respectively. Of other suppliers, Anglo-Canadian has a capacity of 70,000 tons; Gaspesia, 120,000 (bleaching recently installed), Bathurst 24,000 tons, Donnacona 30,000; Anglo-Newfoundland 22,000; Powell River Co. about 45,000 tons. Total selling value would amount to \$36,000,000, and the increase of \$5 would mean \$1,500,000 additional revenue.

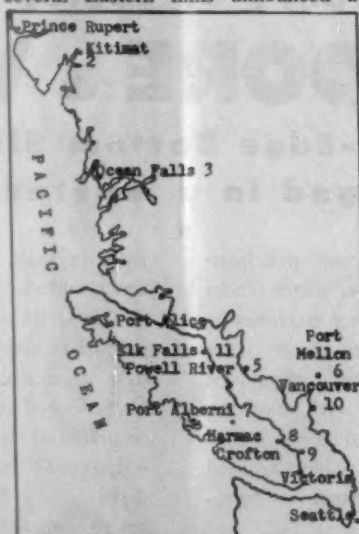
### Dates For Elk Falls Mill and Other Expansion

The new Elk Falls Co. bleached kraft pulp mill being built alongside the newsprint mill at Duncan Bay, is slated for completion in July, 1956. Crown Zellerbach Corp., parent firm, will convert the pulp to paper at a new paper mill at Antioch, Calif., now slated to start up in Sept. 1956.

Tom Hargreaves is manager at Elk Falls, and Gus Ostenson recently was named manager for Antioch.

The tremendous expansion under way by MacMillan & Bloedel at Port Alberni, reported last month, will put that company in the status of a \$90,000,000 investment in market pulp, board and newsprint at Port Alberni and market pulp at Nanaimo, B. C.

Other expansion plans in British Columbia are extensive. They are indicated on accompanying map.



### British Columbia Expansion

Key to Map:

1. Prince Rupert—Columbia Cellulose Co. adding digesters, other facilities.
2. Kitimat—Site for Kitimat Pulp & Paper Co.'s proposed newsprint and market pulp mills.
3. Ocean Falls—Crown Zellerbach Canada modernization.
4. Port Alice—\$8,000,000 expansion by Alaska Pine & Cellulose, Rayonier subsidiary.
5. Powell River—Powell River Co. long-term improvement program.
6. Port Mellon—Canadian Forest Products semi-bleached expansion recently completed.
7. Port Alberni—MacMillan & Bloedel to build 300-ton newsprint mill, 100-ton board mill, add to existing market kraft mill capacity.
8. Harman—MacMillan & Bloedel recently doubled bleached sulfate capacity, completed \$240,000 laboratory.
9. Crofton—Proposed site of B.C. Forest Products \$30,000,000 bleached sulfate mill for market pulp.
10. Vancouver—Crown Zellerbach Canada to build \$4,000,000 converting plant.
11. Duncan Bay—Elk Falls Co.-C-Z subsidiary—building \$15,000,000 kraft mill in conjunction with newsprint mill recently completed.

### Best Hotel Value

in **DENVER, Col.**

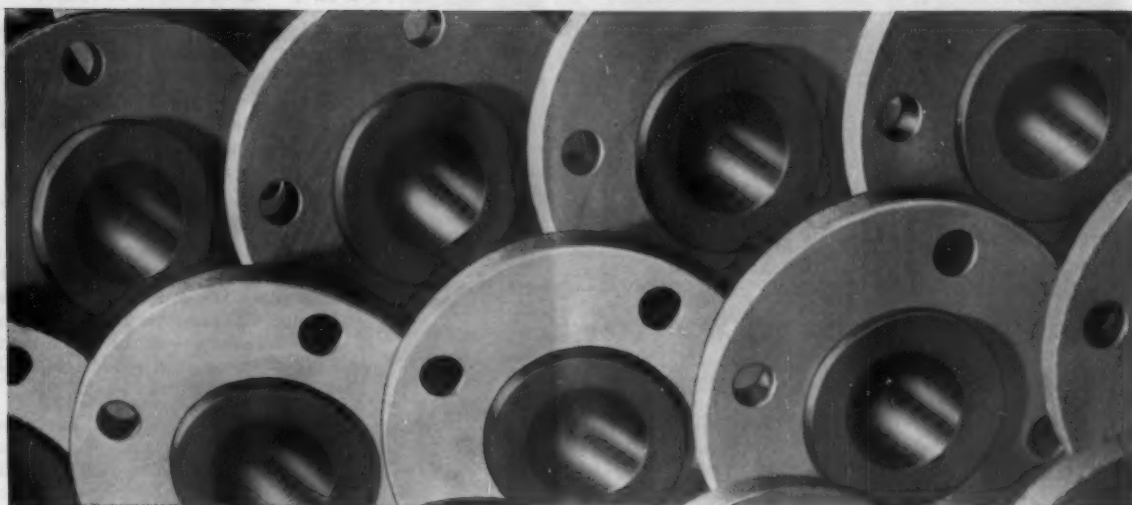
Right in the center of things in Denver. Genuine Western hospitality—400 pleasant, comfortable rooms and suites. Coffee Shop, Dining Room and Shirley Tavern serving excellent food at moderate rates. Cocktail Lounges. Garage facilities—parking.

Write for details about our popular **FAMILY RATE PLAN**

**SHIRLEY SAVOY HOTEL**

17th St. at Broadway





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**SARAN LINED PIPE**  
 GIVES LONG, TROUBLE-FREE SERVICE

**It's made of corrosion-resistant saran pipe swaged into steel for extra rigidity and strength . . . cuts downtime losses conveying corrosive liquids.**

Now you can convey chemicals and many other corrosive liquids without worrying about costly shutdowns due to corrosion. For saran lined pipe, fittings and valves are corrosion-resistant . . . form snug, leakproof joints . . . won't burst under pressure.

They're easily and inexpensively installed because they can be cut and threaded in the field with any standard pipe fitter's tools. Their rigidity means that few supporting members are needed.

Saran lined pipe, fittings and valves have a proved record in industry of bringing long trouble-free service. If your operation requires superior resistance to most chemicals and solvents, be sure to investigate saran lined pipe. Contact the Saran Lined Pipe Company, Department SP527E, 2415 Burdette Avenue, Ferndale 20, Michigan.

**RELATED SARAN PRODUCTS**—Saran rubber tank lining • Saran rubber molding stock • Saran tubing and fittings • Saran pipe and fittings.

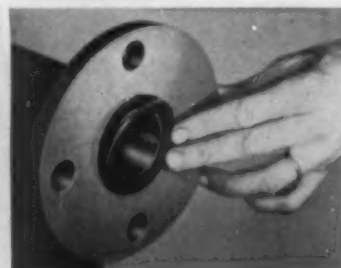
**Saran Lined Pipe Can Be Fabricated Right in the Field!**



A Beaver Cutter cuts away the end of the steel pipe so that  $\frac{5}{8}$ " of the saran lining is extended. This assures a tight seal after a flange is applied and connected with another flange.



A ratchet type thread cutter makes the standard threads after the Beaver Cutter has been used. A flange is then attached and the saran liner filed so its ends are flush with the flange.



A half gasket is used in each flange or whole one can be used in one of the flanges. Then the flanges are joined. The resulting joint is snug, completely airtight and leakproof.

Saran Lined Pipe is Manufactured by  
 The Dow Chemical Company, Midland, Michigan

you can depend on **DOW PLASTICS**

**DOW**

## NEWS FROM EQUIPMENT AND SUPPLY COMPANIES

**PACIFIC INDUSTRIAL ENGINEERING INC.**, the new California firm headed by **ROBERT A. BAUM**, president, who was formerly technical director at Fernstrom Paper Mills and later in field of industrial flotation equipment, has named its products, Pacific Flotation Separators. They are offered especially for removing bark passing barking water screens and low cost treatment of deinking wastes. Other uses are for by-products recovery, solids-liquid separation and pollution control. Pacific Industrial main offices are at Security Bldg., Pasadena 1, Calif., with representatives in Seattle, Houston, and Pittsburgh.

**GRIFFITH RUBBER MILLS**, Portland, Ore., has licensed the manufacture and sale of Griffith Self-Doctoring Topress rolls to Woonsocket Rubber & Plastics Co., Woonsocket, R.I., according to Zina A. Wise, Griffith Rubber president.

**MILTON ROY CO.'s** Data Sheet F-55-1 describes the use of controlled volume pumps in solving low capacity flows of papermakers chemicals in stock preparation. Copies are available free of charge, from Milton Roy, Station 4A, 1300 East Mermaid Lane, Philadelphia 18, Pa.

**CRANE CO.**, Chicago, has added two more products to the more than 40,000 items now manufactured. They are polyethylene plastic pipe and modified polystyrene insert fittings. **J. A. Dwyer**, vice president of Crane Co.'s Industrial Sales Division, said that initial production of plastic pipe is limited in size from 1/2- to 2-in. Dimensions of Crane's polyethylene pipe are in accordance with commercial standards CS 197-54 issued by the U. S. Department of Commerce.

**FISCHER & PORTER CO.** has organized a German affiliate, Sartorius-Fischer, Göttingen, Germany, for manufacture and sales of industrial process control instrumentation and chlorinators.

**DYNAMATIC DIV., EATON MFG. CO.** describes a new adjustable speed drive in bulletin SF-1. Known as Dynaspede liquid cooled, eddy-current couplings, these stationary field power transmission devices, with no rotating electrical components, are adaptable to most adjustable speed requirements. Write to Dynamatic Div., Eaton, Kenosha, Wis.

**HANCHETT MFG. CO.**, Big Rapids, Mich., offers two new machines developed

for accurate grinding of chipper, hog, barker, paper cutter, stop cutter knives, as well as sheer blades, at a high rate of production. Known as the Hy-Power and the Big 60 Hogger both machines are recommended for the maximum in heavy duty grinding performance.

**GENERAL ELECTRIC CO.** has a new precision indicator designed to scan a number of process variables by use of manual switching arrangement on the front panel. Designated Type HJ, it may be used with provision for measuring up to 48 different circuits, or with a multi-point strip strip-chart recorder to obtain an intermittent record.

**CAMCO PRODUCTS, INC.**, has a new Flange Specification Table for ASA and MSS Flanges in a convenient slide rule form. The handy pocket-size reference slide rule is available by writing to Camco at 445 State St., North Haven, Conn. Also a new catalogue on stainless steel pipe fittings, No. 653.

**NOPCO CHEMICAL CO.** has a chart which gives a quick, convenient means of translating any viscosity measurement into seven other standard units. Write to Dept. VC, Nopco Chemical Co., Harrison, N. J.

### SYNTRON

## ELECTRIC VIBRATORS

**Speed The Flow  
Of Bulk Materials**



**through  
bins,  
hoppers  
and chutes**



On bulk handling jobs where economy and speed are important, Syntron "pulsating magnet" Vibrators assure a positive flow of fine powders or hard-to-handle lumps. Their 3600 controllable vibrations per minute keep bins, hoppers and chutes flowing freely with no arching or plugging.

WRITE FOR COMPLETE CATALOG DATA—FREE

**SYNTRON COMPANY**

659 Lexington Avenue

Homer City, Penna.



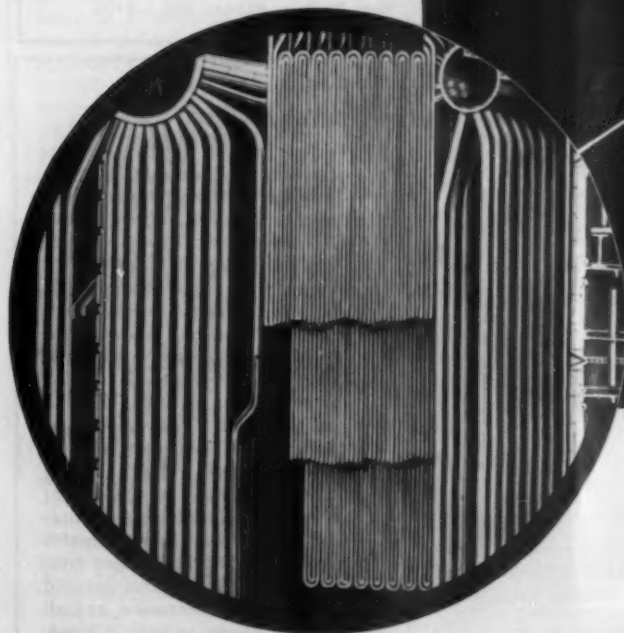
### New German Design Beta Gauge in a Paper Mill

Curtiss-Wright Corp. Beta Gauge, a non-contact nuclear unit for measuring web thickness is shown operating on paper machine. Three units are amplifier cabinet with recorder, control unit and detector head and radiation source.

This instrument was developed in post-war Germany. Confined to peacetime development of the atom, they developed the nuclear unit which to date has been installed in over 400 European paper mills, according to **Werner S. Sorhagen**, Sales Mgr., for beta gauges for Friesche & Hoepfner GmbH in West Germany. Mr. Sorhagen is on loan to Curtiss-Wright at a consultant. **Charles O. Cary**, C-W Electronics Sales Mgr., says advantages of instrument are 1/10 sec. time lag in controlling paper and ability to measure machine "drift."

# No Slag

## foothold here



As shown above, the entire superheater of the C-E Recovery Unit is located directly above the furnace. Thus chemical ash deposits, as they are dislodged from the superheater surfaces, fall directly to the furnace hearth.

Accumulation of slag on superheater tubes means trouble in any boiler. In a chemical recovery unit, fired with black liquor having a high percentage of low fusion temperature ash, slag accumulation can be particularly troublesome. With the conventional type superheater slag builds up and anchors itself around individual tubes, insulates them against heat transfer, blocks gas passage, increases draft loss and necessitates mechanical and manual cleaning.

The panel type superheater, found only on the C-E Recovery Unit, allows slag no such foothold. Each element — or panel — of the superheater consists of a solid wall of tangent tubes with wide spacing between

panels. The space between individual tubes has been eliminated, so that any slag accumulation is confined to the wall-like surface of the elements where much of it frees itself and the rest is easily dislodged.

This panel construction channels gas flow smoothly over the superheater surfaces and slag formation is, therefore, reduced to a minimum. Furthermore, since slag cannot key-up between tubes, the action of the soot blowers is much more effective.

Developed by, and exclusive with C-E, the panel type superheater represents another significant achievement which has resulted from Combustion's consistent efforts "to make good equipment better."



## COMBUSTION ENGINEERING

Combustion Engineering Building • 200 Madison Avenue, New York 16, N. Y.

6-775



## Greater Production With TIDLAND'S Winder Shafts . . .

Do you lose valuable time from winder shaft dismantling troubles? Do shaft deflections damage cores and paper and reduce winder operating speeds?



Then you should investigate the job-tested Tidland pneumatic Shafts now used by over 130 mills in the U.S. and Canada.

Tidland Shafts are custom-built in any length or diameter. Shafts quickly pay for themselves, often in a few weeks. Their simple design contributes to low maintenance costs.

Tidland makes both a leaf-type collapsible shaft for rewind and a lug-type for mill rolls. Both are made of high grade seamless steel tubing. Both are inflated by heavy-duty rubber inner tubes. Removing the shaft from the roll is simply a matter of releasing the air.



Because of their rigid construction and the tight grip exerted along the entire roll, Tidland Shafts eliminate deflections and resulting damage to cores and paper, and make higher maintained operating speeds possible.

Write for specification sheets and illustrated folder.

## TIDLAND SHAFTS

Manufactured by Tidland Machine Co.

CAMAS, WASHINGTON

Represented in New England by  
ORTON CORP., Fitchburg, Mass.

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Ph.D. or Equivalent 35-40  
To Direct Research Laboratory Involving  
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Pulp and Paper Operating Experience Desirable

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We can place—Managers, supts. and asst. supts. for board and paper mills; asst. personnel mgr.; research director; chemists; finishing foremen.

Power, electrical and mechanical engineers; designers and draftsmen; gluing dept. foreman; several tour bosses (Fourdrinier and Cylinder); paper salesmen for New York City, Penn. and Maryland; machine tenders and back tenders; beater engineers.

If you are available for a good paying position in paper or pulp manufacturing or paper converting, it will pay you to have your application in our files. Negotiations are confidential. No fee to be paid unless you accept employment through us.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 2-6547  
294 Washington St. Boston 8, Mass.

### SANITARY ENGINEER

Opportunity available for Sanitary Engineer in an expanding pulp and paper mill located in the Middle Atlantic States. Age 25-35 years. Require man experienced in paper mill wastes, paper mill stream pollution and paper mill water purification. No other experience will be given consideration. Good salary and advancement. Send resume of educational background and industrial experience. All replies confidential.

Box 216, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

**WANTED: SALESMEN.** Get the most out of your calls. You can handle our paper chemicals as a side line. Exceptionally high commissions. For information which will be kept strictly confidential, write Box 202, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

### FINISHING AND SHIPPING FOREMAN

Experienced man for responsible job in growing kraft paper mill in Southeast. Give detailed education, experience, personal information and salary expected. Reply Box 214, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

### WANTED MECHANICAL ENGINEER

Excellent opportunity for properly qualified mechanical engineer to work for progressive machinery manufacturing concern. Job definition includes project engineering for heavy machinery design, development, and application, working towards advancement in sales engineering or research. Prefer man between ages of 25 to 35 with several years proven experience in the pulp and/or paper industry, who is willing to travel a high percentage of the time. Salary offer outstanding, plus group life and health insurance and retirement pension plan. All expenses prepaid if selected for interview, and all moving expenses paid if hired. Please submit full particulars in first letter. All applications strictly confidential. Reply to Box 218, PULP & PAPER, 370 Lexington Ave., New York 17, N.Y.

### DRYING AND COMBUSTION SPECIALIST

Unusual opportunity. Large well-known manufacturer operating over 40 plants has opening for graduate engineer with specialized experience in drying and process combustion engineering. Administrative position on staff of Vice President of Manufacturing. Proven experience necessary in direct heat and drying applications and industrial and process combustion. Must be familiar with most types of fuel and combustion instrumentation. Chicago headquarters. Position will require some travel to company plants to instruct in combustion efficiency and techniques. In reply, state age, education, experience, and salary requirement. Box 215, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

### POTENTIAL SALES ENGINEER WANTED

By established manufacturing corporation of heavy machinery for the pulp and paper industry with large national volume. Age 26 to 35. Must have proven sales ability, preferably in industrial field. College man with mechanical engineering background preferred. Aggressiveness, intelligence, appearance count heavily. Outstanding pay and liberal company benefits. Send in confidence complete resume and snapshot. Expenses for interview paid. If chosen, all moving expenses cared for. Write to Box 217, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

### WANTED

AGGRESSIVE MAN with experience for position as Finishing Room and Warehouse Superintendent in large Pacific Northwest pulp mill. Replies will be kept strictly confidential. Submit age, education, present and past positions. Address Box 208, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

### Sales Representative

Century-old national manufacturer and importer, supplier of raw materials to Paper Mills desires sales representative with technical knowledge of paper industry. Sales experience useful; however, eagerness and ability to sell essential. Applicants must be willing to locate east or mid-west.

Send complete information on education, experience and salary desired. All replies confidential.

Our employees have been informed of this advertisement. Reply to Box 219, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

### WANTED

Engineers or engineering draftsmen for mechanical and automatic machine design, also engineers experienced in pulp mill layouts, structural and concrete design. Give details of experience and training. Box 211, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

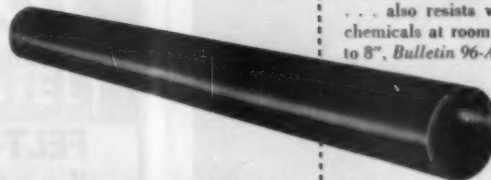
### Mechanized Logging Booklet

An attractive, two-color booklet is available as a general guide to show equipment needed and procedures to follow when logging medium and small-sized logs under conditions most commonly encountered in logging operations. Entitled *How to Log Small Timber Profitably*, the booklet can be obtained by writing to: Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore., or your nearest Caterpillar-Hyster dealer.

### FOR HOT CORROSIVES:

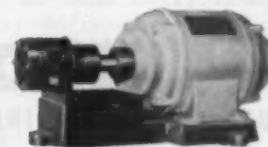
#### ACE TEMPRON

Heat-resistant nitrile hard rubber pipe handles inorganics at 250-275 deg. F. . . . also resists wide range of organic chemicals at room temperature. Sizes 1" to 8", Bulletin 96-A.



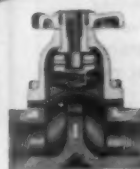
### MIGHTY MIDGET

for pumping acids



Jabsco neoprene-impeller pump made of ACE hard rubber outlasts, out-pumps anything in its pressure, size and price class. Capacity from 15 gpm. at 22 ft. head to 5 gpm. at 72 ft. head. Bulletin 97-A.

**ACE** chemical equipment  
"more resistant to more corrosives"  
From this "super-market" of corrosion-resistant equipment backed by more than a century of engineering experience . . . you can select with confidence.



### VALVES

for all-plastic piping systems

Trouble-free plastic diaphragm valves . . . choice of general-purpose rubber-plastic blend, Ace Parian (polyethylene) or Ace Saran. Handles most corrosive chemicals and food ingredients. Sizes 1/4" to 2", 50 psi. at 77° F. Bulletins 80 and 351.



### 1001 USES for ACE-FLEX Tubing

Excellent chemical-resistant, all-purpose flexible plastic tubing. Sparkling clear, easy to clean, odorless, non-toxic, can be steam-sterilized. 1/4" to 1" ID. Bul. 66.

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**FOR RECLAMATION AND  
REFINING OF KNOTS,  
SCREENINGS AND REJECTS**

### Will Serve Long, Well and Profitably

● The rugged Gruendler Turbo Shredder mechanically opens up tough fiber bundles and knots with little or no increase in fines. Tons of material previously considered unsuitable will be reclaimed . . . with the possibility of savings great enough to amortize the cost of the shredder in a few months.

Available in various sizes, the Gruendler Shredder operates on low horsepower, over a wide range of stock consistency and maintains almost peak efficiency for a much greater period than other types of refiners.

● The Gruendler Crusher & Pulverizer Co. also manufactures Intensive Blenders, Lap Shredders, Knife Hogs, Hammermill Shredders, Turbo Pulp Refiners, Hot Lime Breakers, Salt Cake Pulverizers and Paper Shredders for the Pulp & Paper Industry. Before investing in any new equipment, inquire about the Gruendler line . . . you may find it extremely worthwhile.

● Laboratory and pilot plant facilities are available to help work out your problems with no obligation.

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**CRUSHER AND PULVERIZER CO.**

PULP AND PAPER DIV.

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## FELT PRESERVER UNIT Keeps Felts Soft, Open, "Alive"



Top felt of a Cylinder Machine at  
John Strange Paper Co., Menasha, Wis.

Revolutionary new unit keeps cylinder machine felts open-pored, soft, at peak efficiency almost for life. Allows use of light or heavy sheet during entire felt life—greater versatility in planning grade changes during felt life. Helps keep felt aligned, straightens seam, reduces tension on felt and slices—actually allows use of narrow felt. Discontinues whippers, saves felt wear.

"No disadvantages!" Users report 100% satisfaction, from operators through management, with this amazing inexpensive new Mount Hope Felt Preserver. Write Paper Section today for complete details!

## MOUNT HOPE

**MACHINERY COMPANY**

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## DETERMINE SEWER LOSSES ACCURATELY

with a DeZURIK  
PROPORTIONAL SEWER SAMPLER  
and FLOWMETER



How much valuable fiber and chemical are you losing to the sewer—how efficient is your white water conservation? You'll know the precise answers to these important questions with a DeZurik Sampling Instrument.

Installed in any open sewer flume ahead of a weir, or in a Parshall flume, it automatically measures the total flow, the size of each sample varying in quantity in exact proportion to the flow itself. The composite sample is truly representative even on widely fluctuating flows and concentrations. Flow readings are direct—without complex calculations—without error.

Installed in your mill, the DeZurik Proportional Sampler will give you the exact data needed to combat stream pollution and to improve white water conservation.

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**DeZURIK SHOWER CO.**  
SARTELL, MINNESOTA

PULP & PAPER — March 1955

For sound, helpful  
advice on your  
felt problems...



talk to the man from

**ORISKANY FELTS**

You can depend on the friendly sales engineer who represents Oriskany Felts for helpful ideas on your felt problems. He has had a thorough training in our modern mill, and he has had broad experience in paper-making techniques. He is working constantly with paper makers to develop special Oriskany Felts for every type of paper product.

Working with him is the skilled staff in our completely equipped research laboratory. Here, new materials are being tested, new processes are being developed, to help you make your paper products better... faster... at less cost.

These Oriskany Sales Engineers will welcome the opportunity to serve you:

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*First choice—because They last*



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FELTS**

**H. WATERBURY and SONS CO.**  
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**MOVE YOUR CHIPS WITH AIR!**

**SPEED UP  
CHIP  
HANDLING..**

6" Diameter Conveyair  
pipe can carry as much  
as—

other 36" pipes. Up  
to 30 tons per hour.

COMPACT 3-PIECE UNIT



SMALLER PIPING

HEAVY CONSTRUCTION

**CONVEYAIR CHIPVEYOR**

**BLOWS MORE CHIPS WITH 1/3 THE POWER!**

New "Air-Sealed" Rotary Feeder loads the pipe with more chips and less air. Smaller discharge piping means less initial cost, and the air-saving feeder saves up to 75% in blower power costs.

Do you have a  
chip handling  
problem?

Write us for more  
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of the Chipveyor  
System.

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**THE CONVEYAIR Co.**

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PROBLEMS HAS BEEN OUTSTANDING  
... TRY IT**

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TO THE RESCUE**

Every paper machine builder in the land recognizes the incompleteness of his dryer section without Fulton Dryer Drainage. That's why almost every machine built in recent years has included FDD to improve dryer performance.

That's why hundreds of older machines—even small ones—have also installed FDD. That's why close to 1000 Fulton systems have been installed to date.

Proper graduation of drying temperatures • Uniform drying regardless of speed • Less broke, shrinkage, cockle or curl • Faster drying, conditions permitting • Important cut in steam costs.

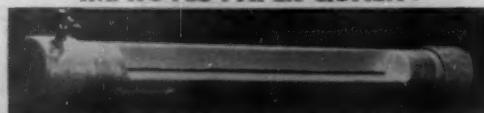
Regardless of the age or size of your paper machine, a Fulton Dryer Drainage system would make you money.

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DAYTON, OHIO

A subsidiary of J. O. Ross Engineering Corporation

**DRIPLESS STEAM SHOWER PIPE  
IMPROVES PAPER QUALITY**



**U.S. Patents 2642314—Canada Pending  
J. H. Dupasquier, Inventor**

- Guaranteed not to drip
- Direct Steam spray—any angle
- Used on: sweat rolls, sweat driers, calender stacks and supers, towelling, and wire, etc.

ALL PIPE MADE TO ORDER UP TO 3" x 275"

Write for Details

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560 E. Clarendon St.

Gladstone, Ore.

**proven  
by  
performance**

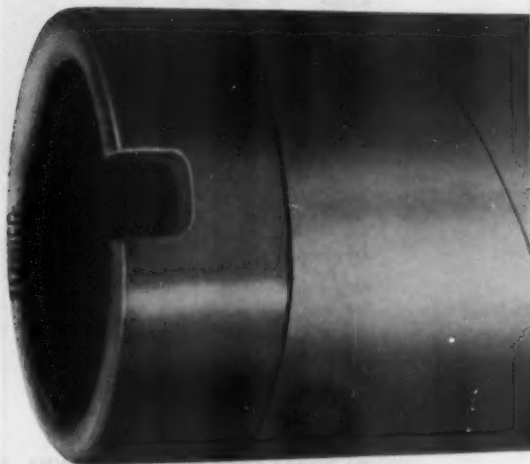
The Sutherland Refiner complete  
continuous Beating and Refining Systems.\*

**UTHERLAND REFINER  
CORPORATION**

TRENTON 8, NEW JERSEY

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the very best...



## SONOCO PAPER MILL CORES

with or without BERMICO Metal Ends

### ECONOMICAL CARRIERS FOR—

- Newsprint • Wax Paper • Parchment Paper • Cash Register
- and Adding Machine Paper • Blue Print Paper • Fine Paper
- Or any paper that can be wound on a core!

**DURO**  
RETURNABLE



Sonoco DURO Paper Mill Cores, with Bermico Metal Ends, combine dependable strength, long service and low cost. They are capable of withstanding abrupt starting and stopping on high speed presses. A special scuff resistant paper is used for the outside wrap. Available with Bermico Metal Ends in sizes 3" to 6" I.D.

Also available is the economical RHINO non-returnable core in standard and special sizes.

SONOCO also supplies a wide variety of specialty cores from 1/4" O.D. and up, in lengths from 1/2" to 24' or longer with smooth or rough surfaces. Furnished in solid colored stock, plain or with special inside or outside wrap.

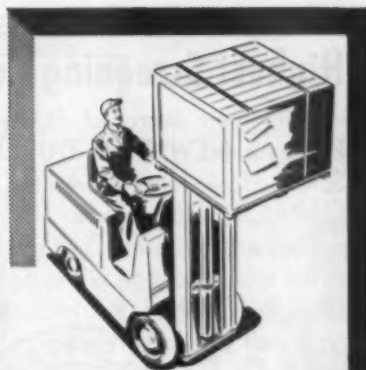


For complete information and prices, write—

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—and he knows at close range—that an accident means serious personal tragedy to the injured man as well as financial and production problems to the plant.

It's a fortunate worker who is employed by one of the progressive firms which have taken the practical step that assures safety against slipping accidents . . . by installing ALGRIP . . . the world's only Abrasive Rolled Steel Floor Plate. Oily, wet or greasy—level or on slope—the ALGRIP floor is foot-safe for the worker . . . safe against skidding for material-handling equipment . . . because ALGRIP's uniformly and deeply embedded abrasive keeps it safe . . . year in, year out.

ALGRIP maintains itself . . . cuts accidents . . . and insurance costs . . . to help pay for itself.

Approved for safety  
by Underwriters' Laboratories.



## A.W. ALGRIP

ABRASIVE ROLLED STEEL FLOOR PLATE

### ALAN WOOD STEEL COMPANY

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Please send A. W. ALGRIP Booklet AL-34

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Other Products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates—Sheets—Strip—(Alloy and Special Grades)



## Highest Screening Capacity

With their improved SLOT DESIGN Fitchburg NEW TYPE-DUPLEX SLOT Screen Plates have proven the HIGHEST CAPACITY plates made.

They are nearest to "self-cleaning" due to the special design milled slots. Require LESS "wash-ups." Maintain highest capacity all day—every day.

Give you up to  $\frac{1}{2}$  more screened stock:  
Pulp, Paper or Board.

**FITCHBURG**  
Screen Plate Co., Inc.

301 South St., Fitchburg, Mass.



Cast Bronze  
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EDWARD E. CONN SAW & TOOL WORKS

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Beacon 0502 & 2238

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JENSSEN TWO TOWER ACID SYSTEMS

JENSSEN PRESSURE ACID SYSTEMS

JENSSEN AUXILIARY PROCESS TOWERS

RECOVERY PLANTS—COOKING ACID

SOLUBLE BASE ACID PLANTS

JENSSEN SO<sub>2</sub> ABSORPTION SYSTEMS

FOR BLEACH PLANT APPLICATION

SULPHUROUS ACID PREPARATION

COMPLETE DESIGN AND INSTALLATION

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WATERTOWN, NEW YORK

Western Representative:

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FOUNDED 1915



proven  
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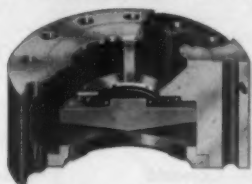
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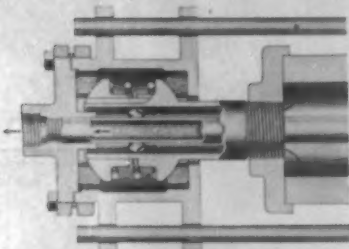
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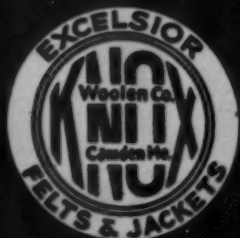
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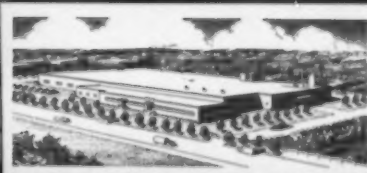
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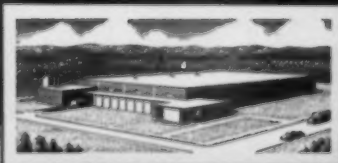
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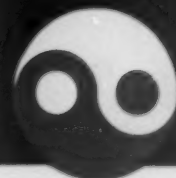
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